



Natural Environment Study

I-5 HOV Lane Extension Project

I-5 Between Avenida Pico and San Juan Creek Road

12-ORA-05 (PM 3.0/8.7)

EA No. 0F9600

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STATE OF CALIFORNIA
Department of Transportation

Prepared By: Elizabeth Delk Date: 9/29/10
Elizabeth Delk, Senior Biologist
LSA Associates
(949) 553-0666

Approved By: Kedest Ketsela Date: 9/29/10
Kedest Ketsela, District Biologist
Caltrans District 12
(949) 440-4462

Approved By: Jonita Deshpande for CF Date: 9/29/10
Chris Flynn, Branch Chief
Caltrans District 12
(949) 279-8715

Summary

The Orange County Transportation Authority (OCTA), in cooperation with the California Department of Transportation (Caltrans), the City of Dana Point, the City of San Clemente, and the City of San Juan Capistrano, is proposing to widen Interstate 5 (I-5) between Avenida Pico and San Juan Creek Road. The I-5 High-Occupancy Vehicle (HOV) Lane Extension Project objectives are to provide continuity of the I-5 mainline HOV network within the project limits; maximize overall performance within the project limits by minimizing weaving conflicts at the termini of the HOV lanes and maintaining travel speeds for HOV lane users; provide intermittent auxiliary lanes, where needed, to relieve congestion at diverge and merge locations; minimize right-of-way acquisition; relieve congestion at interchange areas, on- and off-ramps, and local intersections; and reduce congestion on I-5 within the project limits. The project limits on I-5 extend from 0.4 mile (mi) south of the Avenida Pico Undercrossing (Post Mile [PM] 3.0) to 0.1 mi south of the San Juan Creek Road Undercrossing (PM 8.7). The proposed project will add one HOV lane in each direction on I-5 throughout the project limits, reestablish existing auxiliary lanes and construct new auxiliary lanes, and improve several existing on- and off-ramps.

The preliminary project Build Alternatives were used to identify the environmental effects of those alternatives. This Natural Environment Study (NES) was prepared in support of an Environmental Document for the proposed project in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Because conditions related to biological resources are dynamic (i.e., the locations of special-status species and quality of their habitat may change within the next several years), the impacts assessment in the NES may need to be revised as seasonal data is obtained. The results presented in this NES are based on recent literature searches and biological resource surveys conducted in 2009 and 2010.

In 2009 and 2010, reconnaissance-level biological resource surveys, habitat assessments, focused wildlife surveys, and a jurisdictional delineation were performed to document the existing conditions of biological resources within the biological study area (BSA). The BSA includes areas of undeveloped land within the I-5 right-of-way, which are dominated by ruderal and ornamental vegetation.

The coastal California gnatcatcher (CAGN) was observed during focused surveys. In addition, the BSA includes areas of United States Fish and Wildlife Service (USFWS) CAGN-designated critical habitat. The proposed project is expected to

temporarily impact 0.018 acre (ac) of CAGN-designated critical habitat. However, no temporary or permanent impacts are expected to occur to CAGN or CAGN-occupied habitat. A combination of avoidance and minimization measures and compensatory mitigation would reduce the overall indirect impacts to CAGN and other biological resources. Invasive species would be removed from the project work area and controlled during construction to ensure compliance with Executive Order (EO) 13112 (Invasive Species).

A formal jurisdictional delineation survey determined that there are drainage features within the BSA subject to the jurisdiction of the United States Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG). Option A for all of the Build Alternatives is not expected to impact any of these jurisdictional areas. As a result, the Option A Build Alternatives are not expected to require permits/authorizations from regulatory agencies, including the Corps (pursuant to Section 404 of the Clean Water Act [CWA]), CDFG (pursuant to Section 1602 of the California Fish and Game Code), and the RWQCB (pursuant to Section 401 of the CWA). However, Option B for all of the Alternatives is expected to permanently impact potential Corps, CDFG, and RWQCB jurisdictional areas. As a result, the Option B Build Alternatives will require permits/authorizations from the Corps, CDFG, and RWQCB. The findings and conclusions regarding the locations and extent of the areas' regulatory jurisdiction (or lack thereof) represent the professional opinion of the consultant. These findings and conclusions are considered preliminary until verified by the resource agencies.

To offset impacts to jurisdictional areas, a compensatory mitigation program for the project may be needed. Compensatory mitigation may involve habitat restoration within State right-of-way, mitigation at agency-approved off-site locations, or participation in agency-approved mitigation banks. The final compensatory mitigation program is expected to adequately offset project-related jurisdictional impacts by providing "No Net Loss" of wetland and riparian habitats.

Since a small quantity of CAGN-designated critical habitat will be temporarily impacted, Federal Section 7 consultation between Caltrans and USFWS may be necessary for the I-5 HOV Lane Extension Project. The USFWS will determine whether Federal Section 7 consultation is necessary during informal Section 7 consultation. It is likely that USFWS will conclude that the proposed project will have "no effect" or "may affect but not adversely affect" CAGN and its designated critical habitat. Informal Section 7 consultation will determine whether certain Avoidance and Minimization measures will

ensure that there will be no adverse effects to CAGN-designated critical habitat and/or other listed species.

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List of Abbreviated Terms

ac	acre(s)
amsl	above mean sea level
BMP	best management practice
BSA	biological study area
CAGN	coastal California gnatcatcher
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNPSEI	California Native Plant Society Electronic Inventory
Corps	United States Army Corps of Engineers
CSS	coastal sage scrub
CWA	Clean Water Act
EB	eastbound
EO	Executive Order
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FR	Federal Register
ft	foot/feet
GIS	geographic information system
HCP	Habitat Conservation Plan
HOV	high-occupancy vehicle
I-5	Interstate 5
in	inch(es)
IS/EA	Initial Study/Environmental Assessment
LBV	least Bell's vireo

LSA	LSA Associates, Inc.
MBTA	Migratory Bird Treaty Act
mi	mile(s)
MOU	Memorandum of Understanding
NB	northbound
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OCTA	Orange County Transportation Authority
OHWM	ordinary high water mark
PA/ED	Project Approval/Environmental Document
PCH	Pacific Coast Highway
PM	Post Mile
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SAN	Streambed Alteration Notification
SB	southbound
sq mi	square mile(s)
SR-1	State Route 1
SWPPP	Storm Water Pollution Prevention Plan
SWWF	southwestern willow flycatcher
TCE	temporary construction easement
TNW	traditional navigable water
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WB	westbound

Chapter 1. Introduction

1.1. Project Overview

The Orange County Transportation Authority (OCTA), in cooperation with the California Department of Transportation (Caltrans), the City of Dana Point, the City of San Clemente, and the City of San Juan Capistrano, is proposing to widen Interstate 5 (I-5) between Avenida Pico and San Juan Creek Road (Figure 1). The I-5 High-Occupancy Vehicle (HOV) Lane Extension Project objectives are to provide continuity of the I-5 mainline HOV network within the project limits; maximize overall performance within the project limits by minimizing weaving conflicts at the termini of the HOV lanes and maintaining travel speeds for HOV lane users; provide intermittent auxiliary lanes, where needed, to relieve congestion at diverge and merge locations; minimize right-of-way acquisition; relieve congestion at interchange areas, on- and off-ramps, and local intersections; and reduce congestion on I-5 within the project limits. The project limits on I-5 extend from 0.4 mile (mi) south of the Avenida Pico Undercrossing (Post Mile [PM] 3.0) to 0.1 mi south of the San Juan Creek Road Undercrossing (PM 8.7). The proposed project will add one HOV lane in each direction on I-5 throughout the project limits, reestablish existing auxiliary lanes and construct new auxiliary lanes, and improve several existing on- and off-ramps.

1.2. Project History

I-5 is a major north-south route that is used for interregional, interstate, and international travel and goods movement. It connects San Diego County from the south to Los Angeles County to the north and traverses many cities, including cities in Orange County. The purpose of this project is to improve existing and future traffic operations on I-5 from San Juan Creek Road to Avenida Pico while minimizing environmental and economic impacts. The following key issues represent the general deficiencies on I-5 within the project limits and the potential solutions/opportunities for improvements:

- Achieve higher person-carrying capacity within the corridor by increasing the vehicle occupancy rate
- Reduce pollution and improve air quality along the corridor
- Promote ride sharing and the use of HOVs such as carpools, vanpools, and bus services

Figure 1: Project Location

- Provide another lane option allowing for more consistent and predictable travel times for carpools, vanpools, buses, transit services, and emergency vehicles during peak periods
- Relieve congestion due to the merge and diverge points for successive on- and off-ramps in both directions
- Reduce delay due to the existing HOV termini location
- Improve the capacity of the on- and off-ramps within the project limits where needed
- Relieve congestion between successive ramps at several interchanges

The project objectives are as follows:

- Provide continuity of the I-5 mainline HOV network within the project limits
- Maximize overall performance within the project limits by minimizing weaving conflicts at the termini of the HOV lanes and maintaining travel speeds for HOV lane users
- Provide intermittent auxiliary lanes, where needed, to relieve congestion at diverge and merge locations
- Minimize right-of-way acquisition
- Relieve local street congestion at interchange areas, on- and off-ramps, and local intersections
- Reduce congestion on I-5 within the project limits

Without this project, the efficiency of the regional HOV system will be reduced because HOV traffic will be required to continue to merge into mixed-flow traffic lanes. Delay in completion of this project will contribute to traffic congestion on I-5 in the Cities of San Clemente, Dana Point, and San Juan Capistrano. The proposed I-5 HOV Lane Extension Project is needed to address:

- The high level of traffic through this section on weekdays as well as weekends/holidays;
- Congestion due to the termination of the existing HOV lane in both directions;
- Delay due to weaving and merging of HOVs at the current termini in both directions
- Congestion at the on-/off-ramps due to high traffic demands at the ramps
- Congestion due to weaving and merging between the successive ramps at several interchanges

1.3. Project Description

Four alternatives, including the No Build Alternative, will be analyzed as part of the Draft Initial Study/Environmental Assessment (IS/EA). The project alternatives are described below.

1.3.1. Alternative 1: No Build

The No Build Alternative proposes no improvements to I-5, maintaining the existing four general-purpose lanes throughout the project limits in the northbound (NB) and southbound (SB) directions. All freeway facilities would remain as is, with the exception of approved projects that are under development or currently being constructed.

1.3.2. Alternative 2

1.3.2.1. AUXILIARY LANES

Alternative 2 proposes to remove the existing I-5 paved shoulders and construct new traveled way and new shoulder pavement to the outside of the NB and SB lanes to accommodate HOV lanes. This alternative proposes full standard widths, including a 10-foot (ft) inside shoulder, a 12 ft HOV lane, a 4 ft buffer, four 12 ft general-purpose lanes, and a 10 ft outside shoulder in each direction throughout the majority of the project limits. Additionally, existing auxiliary lanes throughout the project limits are proposed to be reestablished, and new auxiliary lanes will be constructed at the following locations:

- To the Avenida Vista Hermosa SB off-ramp
- From the Avenida Vista Hermosa NB on-ramp
- From the Camino de Estrella SB on-ramp

1.3.2.2. AVENIDA PICO INTERCHANGE IMPROVEMENTS

In addition to providing an HOV lane in both directions through the I-5/Avenida Pico interchange, the interchange configuration will also be improved. There are two options under consideration for reconfiguration of the interchange, both of which require replacement of the Avenida Pico Overcrossing structure.

Design Option A: Modified Tight Diamond Interchange

Under this option, the on- and off-ramps at Avenida Pico will be realigned and the NB on-ramp will be widened to three lanes. The overall configuration of the interchange under this option will be similar to the existing configuration. Additionally, Avenida Pico will be improved under the structure to provide dual left-turn lanes to both the NB and SB on-ramps. This alternative will incorporate an interconnect line to optimize signal

timing and operations for the closely spaced intersections at the interchange. The geometry of Avenida Pico will also be improved on the east side of I-5 to remove the existing reverse curves. Bicycle lanes and standard outside shoulders will be provided throughout the majority of the interchange in both the eastbound (EB) and westbound (WB) directions. A sidewalk will be provided through the interchange in the EB direction. In the WB direction, space will be provided to accommodate future construction of a sidewalk through the interchange.

Design Option B: NB Loop On-Ramp/Realigned NB Off-Ramp

Under this option, an NB loop on-ramp will be added to allow for the removal of the existing left-turn lane for traffic heading EB on Avenida Pico to access NB I-5. The existing directional on-ramp would remain in place for traffic heading WB to access NB I-5. Additionally, the NB off-ramp would be reconfigured around the loop, resulting in a partial cloverleaf configuration. The SB ramps will be realigned, and the geometry of Avenida Pico will be improved as proposed in Design Option A. Dual left-turn lanes will be provided under the structure to the SB on-ramp. Bicycle lanes and standard outside shoulders will be provided throughout the majority of the interchange in both the EB and WB directions. A sidewalk will be provided through the interchange in the EB direction. In the WB direction, space will be provided to accommodate future construction of a sidewalk through the interchange.

1.3.2.3. RAMPS

All ramps within the project limits will be modified to accommodate the HOV lanes. These modifications include improvements ranging from restriping to complete reconstruction. The specific ramp modifications under this alternative are described below:

Avenida Pico

- Modify the ramps as described in Design Options A and B above

Avenida Vista Hermosa

- Restripe the NB and SB loop on-ramps
- Restripe and reconstruct the NB on- and off-ramps and SB off-ramp

Camino de Estrella

- Realign, reconstruct, and widen the SB off-ramp to a two-lane ramp
- Realign and reconstruct the NB and SB on-ramps and NB loop on-ramp
- Realign the NB off-ramp

Camino Las Ramblas/Pacific Coast Highway (PCH)

- Realign, reconstruct, and widen the SB PCH to SB I-5 connector to a two-lane connector
- Realign and reconstruct the SB loop on-ramp
- Realign the SB off-ramp and NB on- and off-ramps
- Realign the NB I-5 connector

Camino Capistrano (Stonehill Drive)

- Realign and reconstruct the NB on-ramp with a lower profile under the bridge to provide standard vertical clearance

1.3.2.4. STRUCTURES**Via California**

Reduced shoulder widths are proposed under the Via California Overcrossing structure to avoid replacement of the existing Via California Overcrossing (Bridge No. 55-225). The inside shoulder will be reduced to approximately 4 ft wide at the minimum location and the HOV buffer will be eliminated in the NB direction.

Avenida Pico

This alternative also proposes to replace the Avenida Pico Undercrossing structure (Bridge No. 55-205) to accommodate the HOV lane in each direction through the interchange. To achieve minimum vertical clearance for this structure, the I-5 mainline profile will be raised throughout the interchange area. Additionally, to ensure that all existing mainline lanes are open throughout construction, the I-5 centerline will be realigned approximately 20 ft to the west through the interchange.

Avenida Vaquero Undercrossing (Bridge No. 55-223)

This structure will be widened.

NB I-5 to NB PCH Connector (Bridge No. 55-226)

This structure will be widened.

I-5/Camino Las Ramblas Undercrossing (Bridge No. 55-510)

This structure will be widened.

Camino Capistrano Undercrossing (Stonehill Drive) (Bridge Nos. 55-227L and 55-227R)

This structure will be widened.

1.3.2.5. OTHER IMPROVEMENTS

Alternative 2 proposes to improve the existing compound curve between 0.3 mi south of Stonehill Drive and PCH. This alternative would provide a wide inside shoulder (26 ft at the maximum width) throughout the southern part of the curve and would increase the radius from 2,000 ft to 2,200 ft to accommodate standard stopping sight distance in the SB direction. For the northern part of the curve, the existing radius will be increased from 3,200 ft to 3,300 ft, with a 16 ft shoulder, to achieve full standard stopping sight distance throughout this part of the compound curve. To accommodate the improvements to this compound curve, the median will be reconstructed.

1.3.3. Alternative 3

Alternative 3 is very similar in nature to Alternative 2. The differences between Alternatives 2 and 3 are described below.

1.3.3.1. AUXILIARY LANES

New auxiliary lanes will be constructed at the same locations as proposed in Alternative 2.

1.3.3.2. AVENIDA PICO INTERCHANGE IMPROVEMENTS

The design options for the Avenida Pico interchange reconfiguration under Alternative 3 will be the same as those proposed under Alternative 2.

1.3.3.3. RAMPS

Ramp modifications under Alternative 3 will be the same as those proposed under Alternative 2 with the exception of the following:

Camino Capistrano (Stonehill Drive)

- Realign and reconstruct NB on-ramp with no profile adjustment under I-5

1.3.3.4. STRUCTURES

Modifications and improvements to structures under Alternative 3 are the same as those proposed under Alternative 2 except that the I-5 NB Camino Capistrano Undercrossing (Stonehill Drive) (Bridge Nos. 55-227L and 55-227R) will not be widened.

1.3.3.5. OTHER IMPROVEMENTS

Unlike Alternative 2, in Alternative 3, for the northern part of the compound curve, the existing radius would not be changed and a 2 ft median shoulder would be provided, resulting in a nonstandard stopping sight distance. To accommodate the improvements to this compound curve, the median would be reconstructed.

1.3.4. Alternative 4

Alternative 4 includes many of the improvements common to Alternatives 2 and 3 with a few modifications. Alternative 4 proposes no buffer instead of the 4 ft buffer proposed under Alternatives 2 and 3. Under the no buffer scenario, the HOV lanes will either accommodate limited access, with ingress/egress points for the interchanges, or continuous access throughout the project limits.

1.3.4.1. AUXILIARY LANES

New auxiliary lanes will be constructed under Alternative 4 at the same locations as proposed in Alternatives 2 and 3.

1.3.4.2. AVENIDA PICO INTERCHANGE IMPROVEMENTS

Design options for the Avenida Pico interchange reconfiguration under Alternative 4 will be the same as those proposed under Alternative 2.

1.3.4.3. RAMPS

The ramp modifications under Alternative 4 will be the same as those proposed under Alternative 3.

1.3.4.4. STRUCTURES

Modifications and improvements to structures under Alternative 4 will be the same as those proposed under Alternatives 2 and 3.

1.3.4.5. OTHER IMPROVEMENTS

Unlike Alternatives 2 and 3, under Alternative 4, for the northern part of the compound curve, the existing radius would not be changed and a standard 10 ft median shoulder would be provided, which would minimize impacts but result in a nonstandard stopping sight distance condition. To accommodate the improvements to this compound curve, the median will be reconstructed.

Chapter 2. Regulatory Requirements and Study Methods

2.1. Regulatory Requirements

2.1.1. Review of Jurisdiction Subject to Section 404 of the Clean Water Act

Pursuant to Section 404 of the Clean Water Act (CWA), the United States Army Corps of Engineers (Corps) regulates the discharge of dredged and/or fill material into waters of the United States. The term “waters of the United States” is defined in 33 Code of Federal Regulations (CFR) Part 328 as including: (1) all navigable waters (including all waters subject to the ebb and flow of the tide), (2) all interstate waters and wetlands, (3) all impoundments of waters mentioned above, (4) all tributaries to waters mentioned above, (5) the territorial seas, and (6) all wetlands adjacent to the waters defined above.

The temporary or permanent discharge of dredged or fill material (temporarily or permanently) into waters of the United States (including wetlands) requires authorization from the Corps pursuant to Section 404 of the CWA. The Corps will generally not assert jurisdiction over swales or erosional features, or ditches excavated wholly in and draining only uplands that do not carry a relatively permanent flow of water. However, the Corps reserves the right to regulate these waters on a case-by-case basis. In anticipation of a jurisdictional decision (concurrence) from the Corps, a Section 404 permit is not expected to be required for this project, but may be required.

2.1.2. Review of Jurisdiction Subject to Section 1600 of the California Fish and Game Code

Pursuant to Division 2, Chapter 6, Sections 1600–1602, of the California Fish and Game Code, the California Department of Fish and Game (CDFG) regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife.

Unlike the Corps, CDFG regulates not only the discharge of dredged or fill material, but all activities that alter streams and lakes and their associated habitats. These additional areas include some artificial stock ponds and irrigation ditches constructed on uplands and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area’s federal wetland status. In addition, the lateral extent of streambed may, in

some situations, extend to include broader cross-sectional widths of drainages and floodplains above and beyond the area contained within the ordinary high water mark (OHWM), depending on the hydrological regime of a stream or river. For this reason, the dimensions of a CDFG jurisdictional streambed may vary substantially from the measured OHWM within the same stream or river.

A CDFG Streambed Alteration Notification (SAN) is required for all activities resulting in substantial effects to streambeds and their associated riparian habitats. The CDFG will generally not assert jurisdiction over habitat areas that are not associated with a river, stream, or lake. However, the CDFG reserves the right to regulate these areas on a case-by-case basis.

Option A for all of the Build Alternatives is not expected to permanently impact potential CDFG jurisdictional areas; therefore, a CDFG notification is not expected to be required should Option A from any of the Build Alternatives be selected. However, Option B for all of the Build Alternatives is expected to permanently impact potential CDFG jurisdictional areas. Should Option B for any of the Build Alternatives be selected, a CDFG notification is expected to be required. The findings and conclusions regarding the locations and extent of wetlands and other waters subject to regulatory jurisdiction (or lack thereof) represent the professional opinion of the consultant. These findings and conclusions are considered preliminary until verified by the resource agencies.

2.1.3. Review of Jurisdiction Subject to Section 401 of the Clean Water Act

The Regional Water Quality Control Board (RWQCB) is responsible for the administration of Section 401 of the CWA. Typically, the areas subject to RWQCB jurisdiction coincide with those of the Corps (i.e., waters of the United States, including any wetlands). The RWQCB also asserts authority over waters of the State under waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Upon a jurisdictional determination (concurrence) from the Corps, a Section 401 Water Quality Certification from the RWQCB may be required for this project.

2.1.4. Federal Endangered Species Act

Under the provisions of Section 7(a)(2) of the Federal Endangered Species Act (FESA), a federal agency that permits, licenses, funds, or otherwise authorizes a project activity

must consult with the United States Fish and Wildlife Service (USFWS) to ensure that its actions would not jeopardize the continued existence of any listed species or destroy or adversely modify critical habitat that may be impacted by the project.

Pursuant to Section 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), as described in the National Environmental Policy Act (NEPA) Delegation Pilot Program Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans), Caltrans was designated the authority to conduct Section 7 consultation, effective July 1, 2007. Because 0.018 acre (ac) of CAGN-designated critical habitat may be temporarily impacted, Federal Section 7 consultation between Caltrans and the USFWS may be necessary for the project. The USFWS will make the decision for federal Section 7 consultation during informal Section 7 consultation. It is likely that USFWS will conclude that the proposed project will have "no effect" or "may affect but not adversely affect" CAGN and its designated critical habitat. Informal Section 7 consultation will determine whether certain Avoidance and Minimization Measures will ensure that there are no adverse effects to CAGN-designated critical habitat, CAGN, and LBV.

2.1.5. California Endangered Species Act

The California Endangered Species Act (CESA) is administered by CDFG and prohibits the take of plant and animal species identified as either threatened or endangered in the State of California by the Fish and Game Commission (Fish and Game Code Section 2050–2089). "Take" means to hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture or kill. Sections 2081 and 2080.1 of CESA allow CDFG to authorize exceptions to the prohibition of take of the State-listed threatened or endangered plant and animal species for purposes such as public and private development. CDFG requires formal consultation to ensure that its actions would not jeopardize the continued existence of any listed species or destroy or adversely modify critical habitat.

Authorization from CDFG under Sections 2081 or 2080.1 of the Fish and Game Code for take of any endangered, threatened, or candidate species is not expected to be required for the project because direct take of State-listed species is not expected. However, informal consultation is recommended to make certain Avoidance and Minimization measures will ensure no adverse effects to and LBV.

2.1.6. Migratory Bird Treaty Act

Native bird species and their nests are protected under the Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] 703-712). The MBTA states that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected. The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale of any migratory bird or its eggs, parts, or nests, except as authorized under a valid permit.

2.1.7. Invasive Species

On February 3, 1999, President Clinton signed Executive Order (EO) 13112 (Invasive Species), requiring federal agencies to combat the introduction or spread of invasive species in the United States. This EO defines invasive species as "...any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." FHWA guidance issued August 10, 1999, directs the use of the State's noxious weed list to define the invasive plants that must be considered as part of the California Environmental Quality Act (CEQA) analysis for a proposed project in California.

2.2. Studies Required

2.2.1. Definition of Biological Study Area

The biological study area (BSA) for the proposed project was determined by incorporating electronic data provided by the design engineer into a geographic information system (GIS) layout that included areas of potential direct impact. The limits of the BSA were extended beyond the maximum extent of potential direct impact where necessary to identify sensitive biological resources within and immediately adjacent to the project area, but were limited due to lack of access permission. In general, this provided for a survey area that was larger than the area of potential direct impact. The BSA was used as the study limit boundaries for all biological studies conducted during 2009 and studies proposed to be conducted in 2010. Where access was available, the BSA was surveyed on foot. Where access was not available (e.g., no permission granted by property owner, inaccessibly steep slopes, or locked gate), areas were analyzed from accessible property boundaries with the aid of binoculars.

2.2.2. General Surveys and Habitat Assessments

Prior to performing the field surveys, existing documentation relevant to the BSA was reviewed. Database records reviewed were:

- California Natural Diversity Database (CNDDDB) information (Version 3.1.0), which is administered by CDFG. This database covers sensitive plant and animal species as well as sensitive natural communities within California.
- The California Native Plant Society (CNPS) On-Line Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPSEI; 2009).
- A letter received from the USFWS dated September 28, 2009, that provided a list of proposed, threatened, or endangered species potentially occurring within or in the vicinity of the BSA.

Searches of these databases were conducted for the United States Geological Survey (USGS) quadrangles containing the BSA, the *Dana Point* and *San Clemente, California* USGS 7.5-minute quadrangles. In addition, database searches were extended to include the following surrounding USGS 7.5-minute quadrangles: *San Onofre Bluff*, *Margarita Peak*, *Las Pulgas Canyon*, *San Juan Capistrano*, *Canada Gobernadora* and *Oceanside, California*. Other sensitive species known by LSA Associates, Inc. (LSA) to occur in the general area were also considered.

The reconnaissance-level survey and habitat mapping were conducted on September 15 and 22, 2009, and August 20, 2010, by LSA biologists Elizabeth Delk, Erin Saverio-Seibert, Ingri Quon, and Kristen Yee.

Plant communities and subcommunities were determined in general accordance with the categories defined in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Vegetation communities were mapped on an orthographically corrected 1-inch (in) = 200 feet (ft) aerial photograph. Habitat areas that were considered too small to map separately were included in nearby habitat types determined to be the most appropriate based on species composition.

To adequately identify habitat types (i.e., plant communities) within the BSA, survey methods included pulling off the roadway in other Interstate 5 (I-5) right-of-way, as well as accessing frontage roads leading to necessary access points. At the access points, the LSA biologists investigated the roadside areas on foot or with the aid of binoculars if access permission or foot access were not possible.

2.2.3. Botanical Surveys

Focused botanical surveys within the BSA were conducted on April 9 and 16, 2010, and June 3, 2010, by LSA biologists Stan Spencer, Jim Harrison, and Elizabeth Delk. The timing of the surveys corresponded with the optimal times for detecting special-interest plants in the BSA. To adequately search for special-interest plant species, survey methods included pulling off onto the shoulder areas of I-5, as well as exiting to access frontage roads leading to access points. At the access points, each biologist investigated the roadside areas on foot or with the aid of binoculars if foot access was not possible. All plant species observed during the focused surveys were documented and included in Appendix A, Special-Interest Plant Species Memorandum.

2.2.4. Wildlife Surveys

All wildlife species observed during the focused surveys were documented and included in Appendix B, Wildlife Species Observed.

2.2.4.1. FOCUSED RIPARIAN BIRD SURVEYS

Focused riparian bird surveys for special-status riparian bird species known to occur or potentially occur in the BSA were conducted during the appropriate survey periods from April 13, 2010, to July 8, 2010, by LSA biologists Ingri Quon and Richard Erickson. Surveys were conducted in accordance with the protocols set forth for LBV (*Vireo bellii pusillus*). While permits are not required for presence/absence surveys for LBV, surveys were conducted in accordance with provisions of Federal Fish and Wildlife Permit TE777965-8 (April 8, 2008–April 7, 2012) and a CDFG attachment to Scientific Collecting Permit SC-000777 providing Conditions for Research on Listed Birds (July 12, 2009–April 30, 2012). The Riparian Bird Survey Report is provided in Appendix C, Coastal Riparian Bird Survey Report. All wildlife species observed during the focused surveys were documented and included in Appendix B, Wildlife Species Observed.

2.2.4.2. FOCUSED COASTAL CALIFORNIA GNATCATCHER SURVEYS

Focused coastal California gnatcatcher (CAGN) (*Polioptila californica californica*) surveys were conducted during the nonbreeding season from October 5, 2009, to January 25, 2010, by LSA biologists Ingri Quon and Richard Erickson. Surveys were conducted pursuant to Federal Fish and Wildlife Permit TE777965-8 (April 8, 2008–April 7, 2012) and a CDFG attachment to Scientific Collecting Permit SC-000777 providing Conditions for Research on Listed Birds (July 12, 2009–April 30, 2012).

The CAGN survey report is provided in Appendix D, Coastal California Gnatcatcher Survey Report. All wildlife species observed during this focused survey were documented and are listed in Appendix B, Wildlife Species Observed.

2.2.4.3. BAT HABITAT SUITABILITY ASSESSMENT

A bat habitat suitability assessment was conducted by LSA biologist Jill Carpenter on December 8 and 9, 2009, to ascertain the potential for bat foraging and roosting activity within the BSA. Potential foraging habitat was assessed throughout the BSA on the basis of vegetation composition, adjacent habitat, and accessibility. Potential roosting sites were identified through the examination of bridges, culvert structures, and rocky outcrops for suitable crevices and roosting habitat. Large trees suitable for foliage-roosting species were noted, but roosting activity at these locations could not be confirmed due to the nature of this roosting behavior. The bat survey is provided in Appendix E, Bat Habitat Suitability Assessment Memorandum. All wildlife species observed during this focused survey were documented and are listed in Appendix B, Wildlife Species Observed.

2.2.4.4. ARROYO TOAD HABITAT SUITABILITY ASSESSMENT

An arroyo toad (*Bufo californicus*) habitat suitability assessment was conducted by LSA biologist Ingri Quon on September 22, 2009, to assess conditions for arroyo toad in the BSA. The conditions within San Juan Creek at I-5 appeared suitable for arroyo toad breeding and foraging. The creek bed has a narrow channel of slow-moving, shallow water with a sandy substrate throughout the bottom of the concrete channel. The channel bottom in this area is over 100 ft wide. Upland habitat quality immediately adjacent to the BSA is low to marginal, but upstream there is marginally suitable upland habitat with channel vegetation of mature willow riparian forest and willow riparian scrub.

A copy of the arroyo toad habitat suitability assessment is included in Appendix F, Arroyo Toad Habitat Suitability Assessment Memorandum. All wildlife species observed during this suitability assessment were documented and are included in Appendix B, Wildlife Species Observed.

2.2.4.5. FAIRY SHRIMP HABITAT SUITABILITY ASSESSMENT

A fairy shrimp habitat suitability assessment was conducted by LSA biologist Stan Spencer on December 14 and 15, 2009, to assess conditions for fairy shrimp in the BSA. A follow-up visit was conducted by Stan Spencer on January 28, 2010.

A copy of the fairy shrimp habitat suitability assessment is included in Appendix G, Fairy Shrimp Habitat Suitability Assessment Memorandum. All wildlife species observed

during this suitability assessment survey were noted and are included in Appendix B, Wildlife Species Observed.

2.2.5. Jurisdictional Delineation

The fieldwork for the jurisdictional delineation was conducted by LSA biologists Ingri Quon and Nicole West on November 30, and December 1, 2, 3, and 18, 2009. Where access was available, the BSA was surveyed on foot for both federal and State jurisdictional areas. Where access was not available (e.g., no permission granted by property owner, inaccessibly steep slopes, or locked gate), areas were analyzed from adjacent property boundaries. In these instances, potentially jurisdictional areas were assumed present if resources were observed (e.g., riparian vegetation or drainages).

Areas of potential jurisdiction were evaluated according to Corps and CDFG criteria. The boundaries of the potential jurisdictional areas were observed in the field and mapped on a series of aerial photographs (for each scale, 1 in = approximately 200 ft) that together show the entire BSA. Measurements of federal and State jurisdictional areas mapped during the course of the field investigation were determined by a combination of direct measurements taken in the field and measurements taken from the aerial photographs.

Areas supporting species of plant life potentially indicative of wetlands were evaluated according to the wetland delineation procedures described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0, Regional Supplement, Corps 2008) and the Corps 1987 *Wetland Delineation Manual* (1987 Manual, Environmental Laboratory 1987). Representative sample plots were selected and examined in the field in those areas where wetlands are in question or needed to be confirmed. At each sample plot, the dominant and subdominant plant species were identified and their wetland indicator status noted (Reed 1988). When possible, a small sample pit (approximately 24 in deep) was dug at each plot to examine soil characteristics and composition. Soil matrix colors were classified according to the Munsell Soil Color Charts (Munsell 2000). Hydrological conditions, including any surface inundation, saturated soils, groundwater levels, and/or other wetland hydrology indicators, were noted. General site characteristics were also noted.

The *Jurisdictional Delineation Report* is provided in Appendix H.

2.3. Personnel and Survey Dates

Table 2.1 lists the surveys completed and the personnel utilized for the surveys.

Table 2.1: Surveys Conducted and Personnel Utilized

Survey Type	Dates	LSA Associates, Inc. Biologist(s)
Biological Reconnaissance Survey and Vegetation Mapping	September 15 and 22, 2009, and August 20, 2010	Elizabeth Delk, Erin Saverio-Seibert, Ingri Quon, and Kristen Yee
Focused Plant Surveys	April 9 and 16 and June 3, 2010	Stan Spencer, Jim Harrison, and Elizabeth Delk
Focused Riparian Bird Surveys	April 13 and 24; May 4, 13, and 24; June 7 and 16; and July 8, 2010	Richard Erickson and Ingri Quon
Focused Coastal California Gnatcatcher Surveys	October 5 and 19; November 2, 13, and 27; and December 15 and 30, 2009, and January 12 and 25, 2010	Ingri Quon and Richard Erickson
Bat Habitat Suitability Assessment	December 8 and 9, 2009	Jill Carpenter
Arroyo Toad Habitat Suitability Assessment	September 22, 2009	Ingri Quon
Fairy Shrimp Habitat Suitability Assessment	December 14 and 15, 2009, and January 28, 2010	Stan Spencer
Jurisdictional Delineation	November 30 and December 1, 2, 3, and 18, 2009	Ingri Quon and Nicole West

2.4. Agency Coordination and Professional Contacts

A letter requesting a list of proposed, threatened, or endangered species potentially occurring within the BSA was sent to the USFWS on August 27, 2009. A letter from the USFWS dated September 28, 2009, provided a list of proposed, threatened, or endangered species potentially occurring in the vicinity of the BSA. That letter is provided in Appendix I, USFWS Species List.

2.5. Limitations That May Influence Results

The collection of biological field data is normally subject to environmental factors that cannot be controlled or reliably predicted. Consequently, the interpretation of field data must be conservative and consider the uncertainties and limitations necessarily imposed by the environment. However, due to the experience and qualifications of the consultant biologists involved in the surveys, this limitation is not expected to severely influence the results or substantially alter the findings of the surveys conducted in the BSA in 2009 and 2010.

In addition, as noted earlier, the results of the biological resource surveys are limited where access was not available. When possible, binoculars were used where access was unavailable.

Although information was gathered from the entire BSA, project impacts discussed in this report are considered for biological resources that fall within the project footprint of the various alternatives and design options and in adjacent areas that may be directly or indirectly impacted by the proposed project. The project footprint is defined as the areas in the project right-of-way limits and areas used as temporary construction easements (TCEs).

Chapter 3. Results: Environmental Setting

3.1. Existing Biological and Physical Conditions for the Proposed Project

As described in *The Jepson Manual* (Hickman, J.C., ed. 1993), the biological study area (BSA) is located in the South Coast subregion of the Southwestern California region of the California Floristic Province. The South Coast subregion is characterized by valleys and small hills extending from the coast inland to the foothills of the Transverse and Peninsular Mountain Ranges. Much of the subregion is intensively developed with urban, suburban, and agricultural uses. The natural vegetation of the subregion consists primarily of chaparral, coastal sage scrub (CSS), annual grasslands, and some riparian scrub and woodland. Much of the natural vegetation occurs in scattered, often fragmented patches on hills or in other areas not easily developed. Specifically, the proposed project is located in south Orange County along the existing Interstate 5 (I-5) corridor.

3.1.1. Biological Study Area

The project segment of I-5 and the BSA traverse parts of the Cities of San Clemente, Dana Point, and San Juan Capistrano in Orange County, in mostly urban settings consisting of residential, recreation, commercial, and undeveloped land uses. San Juan Creek passes under the northern end of the BSA.

The BSA extends approximately 6 linear miles (mi) along the I-5 corridor. The northern part of the BSA is in the City of San Juan Capistrano on I-5 at San Juan Creek Road. The BSA's southern terminus is at Avenida Pico in the City of San Clemente. The BSA is located on the United States Geological Survey (USGS) *Dana Point* and *San Clemente, California* 7.5-minute series topographic quadrangles.

As discussed in Section 2.5, Limitations That May Influence Results, information was gathered throughout the entire BSA. The project impacts discussed in this report reflect the direct and indirect, permanent and temporary impacts based on the limits of the footprints of the Build Alternatives and design options, and are not based on the entire BSA.

3.1.2. Physical Conditions

Vegetation communities in the BSA include CSS, riparian scrub, freshwater marsh, ruderal vegetation, ornamental vegetation, developed areas, and bare ground.

Elevations in the BSA range from approximately 0 to 1,830 feet (ft) above mean sea level (amsl). The topography consists of gentle rolling hills adjacent to I-5, with the fairly steep canyons and hillsides of the Santa Ana Mountain foothills to the east of I-5. Canyons and washes associated with tributaries also occur throughout the BSA.

The BSA is located in the San Juan Creek and San Clemente Coastal Streams Watersheds. The San Juan Creek Watershed covers approximately 134 square miles (sq mi) in the Cities of Dana Point, Laguna Hills, Laguna Niguel, Mission Viejo, Rancho Santa Margarita, and San Juan Capistrano. San Juan Creek is a main tributary that originates in the Cleveland National Forest and ultimately flows into the Pacific Ocean.

The San Clemente Coastal Streams Watershed covers approximately 18 sq mi in the Cities of San Clemente, San Juan Capistrano, and Dana Point. The Prima Deshecha Cañada and Segunda Deshecha Cañada are two of the main drainages in the San Clemente Coastal Streams Watershed in the BSA, and both ultimately flow into the Pacific Ocean.

The United States Department of Agriculture Soil Conservation Service describes the soils found in Orange County. Table 3.1 identifies and describes the soil types located in the BSA.

3.1.3. Biological Conditions in the BSA

The plant communities in the BSA consist of a mosaic of several habitat types. A total of seven plant communities, or variations, were identified in the BSA and are discussed below. These plant communities in the BSA are illustrated on the Biological Resources figures provided in Appendix J, Biological Resources, and were mapped based on the existing conditions at the times of the surveys.

Based on field surveys conducted by LSA, Table 3.2 lists the acreage of each of the vegetation communities present in the BSA. These plant communities are described in detail in Table 3.2.

Table 3.1: Soil Series Occurring in the BSA

Soil Series	Description
Alo Clay	9% to 15% slopes
Alo Clay	15% to 30% slopes
Alo Clay	30% to 50% slopes
Anaheim Clay Loam	30% to 50% slopes
Bosanko Clay	9% to 15% slopes
Bosanko Clay	15% to 30% slopes
Bosanko Clay	30% to 50% slopes
Botella Clay Loam	2% to 9% slopes
Botella Clay Loam	9% to 15% slopes
Calleguas Clay Loam	50% to 75% slopes, eroded
Cieneba Sandy Loam	15% to 30% slopes
Cieneba Sandy Loam	30% to 75% slopes, eroded
Corralitos Loamy Sand	Corralitos Loamy Sand
Corralitos Loamy Sand	Moderately fine substratum
Cropley Clay	2% to 9% slopes
Metz Loamy Sand	Metz Loamy Sand
Myford Sandy Loam	2% to 9% slopes
Myford Sandy Loam	9% to 15% slopes
Myford Sandy Loam	9% to 30% slopes, eroded
Riverwash	Riverwash
San Andreas Sandy Loam	15% to 30% slopes
Sorrento Loam	0% to 2% slopes
Sorrento Loam	2% to 9% slopes
Xeralfic Arents	Loamy, 2% to 9% slopes
Xerorthents Loamy	Cut-and-fill areas, 9% to 15% slopes

Source: United States Department of Agriculture Soil Conservation Service and United States Forest Service, 1978.

BSA = biological study area

Table 3.2: Vegetation Communities Occurring in the BSA

Vegetation Community	Total Acres
Scrub and Chaparral Habitats	
Coastal Sage Scrub	11.57
Riparian and Woodland Habitats	
Riparian Scrub	1.03
Freshwater Marsh	0.19
Disturbed Habitats	
Ruderal	48.83
Developed	231.69
Bare Ground	4.57
Ornamental	124.99
Total	422.87

Source: LSA Associates, Inc., February 2010.

BSA = biological study area

3.1.3.1. COASTAL SAGE SCRUB

This habitat type occurs predominantly in the central part of the BSA (Sheets 4 and 8 in Appendix J, Biological Resources). This plant community is dominated by low-growing shrubs and include California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), California buckwheat (*Eriogonum fasciculatum*), California encelia (*Encelia californica*), coastal deerweed (*Lotus scoparius* var. *scoparius*), and bush monkey flower (*Mimulus aurantiacus*).

3.1.3.2. RIPARIAN SCRUB

Riparian scrub habitat occurs throughout the BSA (Sheets 2, 3, 4, and 10 in Appendix J, Biological Resources). The dominant plant species in this habitat is mulefat (*Baccharis salicifolia*). There are few other associated species in this plant community because mulefat grows in dense thickets and precludes other plant species from colonizing. Although mulefat can establish in an upland setting, it is often associated with an established riparian community. Mulefat islands have habitat value because many wildlife species use the dense foliage for camouflage.

3.1.3.3. FRESHWATER MARSH

A small patch of freshwater marsh occurs in the central part of the BSA (Sheet 8 in Appendix J, Biological Resources). This plant community is dominated by herbaceous vegetation, including cattails (*Typha* sp.), willow herb (*Epilobium* sp.), mugwort (*Artemisia douglasiana*), and common cocklebur (*Xanthium strumarium*).

3.1.3.4. RUDERAL VEGETATION

This plant community occurs throughout most of the BSA (Sheets 1, 2, 3, 4, 6, 8, 9, 10, 11, 12 and 13 in Appendix J, Biological Resources) and consists predominantly of ruderal and unmaintained or escaped ornamental vegetation. Plants in this habitat include Bermuda grass (*Cynodon dactylon*), horseweed (*Conyza* sp.), saltbush (*Atriplex* sp.), shortpod mustard (*Hirschfeldia incana*), wild oats (*Avena* sp.) and foxtail chess (*Bromus madritensis* ssp. *rubens*).

3.1.3.5. ORNAMENTAL VEGETATION

This plant community occurs throughout most of the BSA (Sheets 1–13 in Appendix J, Biological Resources) and consists of ornamental vegetation and landscaping (including native species) in developed areas. This community is distinguished from other developed areas based on the larger percentage of open area. This plant community has some habitat value as a buffer between native plant communities and development and can be used for foraging by some wildlife species. Plants in this habitat include acacia (*Acacia* sp.), Mexican fan palm (*Washingtonia robusta*), western sycamore (*Platanus*

racemosa), coast live oak (*Quercus agrifolia* var. *agrifolia*), bougainvillea (*Bougainvillea* sp.), and hottentot-fig (*Carpobrotus edulis*).

3.1.3.6. DEVELOPED AREAS

This habitat consists of developed areas, such as existing paved roads and commercial and residential uses, and occurs throughout the BSA. Vegetation in developed areas consists of small patches of ornamental and ruderal vegetation (such as vegetated medians and landscaped areas).

3.1.3.7. BAREGROUND

This habitat consists of areas with highly compacted soils and little to no vegetation, including cleared or graded areas and dirt access roads and trails, and occurs in small patches throughout the entire BSA.

3.2. Regional Species and Habitats of Concern

The BSA and surrounding areas support a variety of native vegetation communities and also include developed areas. Regional habitats of concern in this area include CSS and riparian communities. Information based on the literature review for the sensitive species in the BSA is provided in this section. Species that require additional surveys and analysis are addressed in Chapter 4, Results: Biological Resources, Discussion of Impacts and Mitigation.

3.2.1. Plants

The BSA supports habitat suitable for a variety of special-status plant species. The BSA contains important biological resources in or adjacent to an urban environment. Based on the literature review, it was determined that a total of 48 special-status plant species have the potential to occur in or in the vicinity of the BSA. Eight of these special-status plant species are federally and/or State-listed endangered, threatened, or candidate species. Further information on these species, including status, habitat requirements, and potential for occurrence, is summarized in Table 3.3. Species that were observed or have habitat present in the BSA are discussed further in Chapter 4.

Table 3.3: Listed, Proposed, and Special-Status Plant Species and Critical Habitat Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Habitat Present/ Absent	Rationale
Aphanisma	<i>Aphanisma blitoides</i>	CSP CNPS: List 1B	Annual herb. Occurs in coastal bluff scrub, coastal dunes, and coastal scrub in sandy or clay soils up to 915 ft in elevation.	March–June	A	No suitable habitat for this species is present in the BSA.
Rainbow manzanita	<i>Arctostaphylos rainbowensis</i>	CSP CNPS: List 1B	Perennial evergreen shrub. Occurs in chaparral from 675 to 2,010 ft in elevation.	December–March	A	No suitable habitat for this species is present in the BSA.
Coastal dunes milk-vetch	<i>Astragalus tener</i> var. <i>titi</i>	FE CE CSP CNPS: List 1B	Annual herb. Occurs in coastal bluff scrub, coastal dunes, and coastal prairie, often in vernal mesic areas. From 3 to 150 ft in elevation.	March–May	A	No suitable habitat for this species is present in the BSA.
Coulter's saltbush	<i>Atriplex coulteri</i>	CSP CNPS: List 1B	Perennial herb. Occurs in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grasslands, usually on ocean bluffs and ridge tops in alkaline or clay soils. From 10 to 1,510 ft in elevation.	March–October	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
South coast saltscale	<i>Atriplex pacifica</i>	CSP CNPS: List 1B	Annual herb. Occurs in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grasslands in alkaline or clay soils. From 9 to 1,380 ft in elevation.	March–October	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Encinitas baccharis	<i>Baccharis vanessae</i>	FT CE CSP CNPS: List 1B	Perennial deciduous shrub. Occurs in chaparral and cismontane woodland from 180 to 2,160 ft in elevation.	August–November	A	No suitable habitat for this species is present in the BSA.

Table 3.3: Listed, Proposed, and Special-Status Plant Species and Critical Habitat Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Habitat Present/Absent	Rationale
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	FT CE CSP CNPS: List 1B.1	Bulbiferous perennial herb. Occurs primarily in vernal pools, but also found in chaparral, cismontane woodlands, coastal scrub, playas, and valley and foothill grasslands, usually in clay soils. From 115 to 4,003 ft in elevation.	March–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>	CSP CNPS: List 1B	Perennial bulbiferous herb. Occurs in closed-cone coniferous forest; chaparral; cismontane woodland; meadows and seeps; valley and foothill grasslands; and mesic, clay, and sometimes serpentine vernal pools. From 90 to 5,076 ft in elevation.	May–July	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Santa Rosa Basalt brodiaea	<i>Brodiaea santarosae</i>	CSP CNPS: List 3	Perennial bulbiferous herb. Occurs in basaltic valley and foothill grasslands from 1,740 to 3,135 ft in elevation.	May–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Intermediate mariposa lily	<i>Calochortus weedii</i> var. <i>intermedius</i>	CSP CNPS: List 1B	Perennial bulbiferous herb. Occurs in chaparral, coastal scrub, and valley and foothill grasslands. Often in dry, rocky soils from 395 to 2,805 ft in elevation.	May–July	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Southern tarplant	<i>Centromadia parryi</i> ssp. <i>australis</i>	CSP CNPS: List 1B	Annual herb. Occurs in vernal pools, margins of marshes and swamps, and vernal mesic valley and foothill grasslands, sometimes with saltgrass on alkaline soils. Up to 1,400 ft in elevation.	May–November	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.

Table 3.3: Listed, Proposed, and Special-Status Plant Species and Critical Habitat Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Habitat Present/Absent	Rationale
Smooth tarplant	<i>Centromadia pungens</i> ssp. <i>laevis</i>	CSP CNPS: List 1B	Annual herb. Occurs in chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grasslands, usually in alkaline soils. From 0 to 1,920 ft in elevation.	April–September	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Orcutt's pincushion	<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	CSP CNPS: List 1B	Annual herb. Occurs in coastal bluff scrub and coastal dunes from 9 to 300 ft in elevation.	January–August	A	No suitable habitat for this species is present in the BSA.
Long-spined spineflower	<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	CSP CNPS: List 1B	Annual herb. Occurs in chaparral, coastal scrub, meadows and seeps, valley and foothill grasslands, and vernal pools, often with clay. From 90 to 4,590 ft in elevation.	April–July	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Summer holly	<i>Comarostaphylis diversifolia</i> ssp. <i>Diversifolia</i>	CSP CNPS: List 1B	Perennial evergreen shrub. Occurs in chaparral and cismontane woodland from 90 to 1,650 ft in elevation.	April–June	A	No suitable habitat for this species is present in the BSA.
Sea dahlia	<i>Coreopsis maritima</i>	CSP CNPS: List 2	Perennial herb. Occurs in coastal bluff scrub and coastal scrub from 15 to 450 ft in elevation.	March–May	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Blochman's dudleya	<i>Dudleya blochmaniae</i> ssp. <i>Blochmaniae</i>	CSP CNPS: List 1B	Perennial herb. Occurs in coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grasslands, often in rocky, clayey, or serpentine soils. From 15 to 1,350 ft in elevation.	April–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.

Table 3.3: Listed, Proposed, and Special-Status Plant Species and Critical Habitat Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Habitat Present/Absent	Rationale
Many-stemmed dudleya	<i>Dudleya multicaulis</i>	CSP CNPS: List 1B	Perennial herb. Occurs in chaparral, coastal scrub, and valley and foothill grasslands, usually in heavy, often clayey soils. From 45 to 2,370 ft in elevation.	April–July	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Laguna Beach dudleya	<i>Dudleya stolonifera</i>	FT CT CSP CNPS: List 1B	Perennial stoloniferous herb. Occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands, often in thin soil on north-facing sandstone cliffs. From 30 to 780 ft in elevation.	May–July	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Sticky dudleya	<i>Dudleya viscida</i>	CSP CNPS: List 1B	Perennial herb. Occurs in chaparral, coastal bluff scrub, cismontane woodland, and rocky coastal scrub from 30 to 1,650 ft in elevation.	May–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
San Diego button-celery	<i>Eryngium aristulatum</i> var. <i>parishii</i>	FE CE CSP CNPS: List 1B	Annual/perennial herb. Occurs in coastal scrub, valley and foothill grasslands, and mesic vernal pools from 60 to 1,860 ft in elevation.	April–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Pendleton button-celery	<i>Eryngium pendletonensis</i>	CSP CNPS: List 1B	Perennial herb. Occurs in coastal bluff scrub; valley and foothill grasslands; and clay, vernal mesic vernal pools from 45 to 330 ft in elevation.	April–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.

Table 3.3: Listed, Proposed, and Special-Status Plant Species and Critical Habitat Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Habitat Present/Absent	Rationale
Sand-loving wallflower	<i>Erysimum ammophilum</i>	CSP CNPS: List 1B	Perennial herb. Occurs in maritime chaparral, coastal dunes, and sandy openings in coastal scrub from 0 to 200 ft in elevation.	February–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Cliff spurge	<i>Euphorbia misera</i>	CSP CNPS: List 2	Perennial shrub. Occurs in coastal bluff scrub, coastal scrub, and Mojavean desert scrub in rocky soils or along cliffs. From 30 to 1,500 ft in elevation.	December–August	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Palmer's grapplinghook	<i>Harpagonella palmeri</i>	CSP CNPS: List 4	Annual herb. Occurs in chaparral, coastal scrub, and valley and foothill grasslands, often in clay soil. From 60 to 2,865 ft in elevation.	March–May	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Vernal barley	<i>Hordeum intercedens</i>	CSP CNPS: List 3	Annual herb. Occurs in coastal dunes, coastal scrub, vernal pools, and valley and foothill grasslands from 15 to 3,000 ft in elevation.	March–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Ramona horkelia	<i>Horkelia truncata</i>	CSP CNPS: List 1B	Perennial herb. Occurs in chaparral and cismontane woodland, in clay and gabbroic soils. From 1,200 to 3,900 ft in elevation.	May–June	A	No suitable habitat for this species is present in the BSA.
California satintail	<i>Imperata brevifolia</i>	CSP CNPS: List 2	Perennial rhizomatous herb. Occurs in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, and riparian scrub in mesic soils. From 0 to 1,500 ft in elevation.	September–May	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.

Table 3.3: Listed, Proposed, and Special-Status Plant Species and Critical Habitat Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Habitat Present/Absent	Rationale
Coulter's goldfields	<i>Lasthenia glabrata</i> ssp. <i>Coulteri</i>	CSP CNPS: List 1B	Annual herb. Occurs in marshes and swamps, playas, and vernal pools from 3 to 3,660 ft in elevation.	February– June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Nuttall's lotus	<i>Lotus nuttallianus</i>	CSP CNPS: List 1B	Annual herb. Occurs in coastal dunes and coastal scrub in sandy soils. From 0 to 30 ft in elevation.	March–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Santa Catalina Island desert-thorn	<i>Lycium brevipes</i> var. <i>hassei</i>	CSP CNPS: List 1B	Perennial deciduous herb. Occurs in coastal scrub and coastal bluff scrub from 30 to 900 ft in elevation.	June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Little mousetail	<i>Myosurus minimus</i> ssp. <i>Apus</i>	CSP CNPS: List 3	Annual herb. Occurs in valley and foothill grasslands and vernal pools from 60 to 1,920 ft in elevation.	March–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Moran's navarretia	<i>Navarretia fossalis</i>	FT CSP CNPS: List 1B	Annual herb. Occurs in chenopod scrub; assorted shallow freshwater marshes; and swamps, playas, and vernal pools from 90 to 3,900 ft in elevation.	April–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.

Table 3.3: Listed, Proposed, and Special-Status Plant Species and Critical Habitat Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Habitat Present/Absent	Rationale
Prostrate vernal pool navarretia	<i>Navarretia prostrata</i>	CSP CNPS: List 1B	Annual herb. Occurs in coastal scrub, meadows and seeps, alkaline valley and foothill grasslands, and mesic vernal pools from 45 to 2,100 ft in elevation.	April–July	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Coast woolly-heads	<i>Nemacaulis denudata</i> var. <i>denudata</i>	CSP CNPS: List 1B	Annual herb. Occurs in coastal dunes from 0 to 300 ft in elevation.	April–September	A	No suitable habitat for this species is present in the BSA.
Slender cottonheads	<i>Nemacaulis denudata</i> var. <i>gracilis</i>	CSP CNPS: List 2	Annual herb. Occurs in coastal dunes, desert dunes, and Sonoran desert scrub from 150 to 1,200 ft in elevation.	(March) April–May	A	No suitable habitat for this species is present in the BSA.
Peninsular nolina	<i>Nolina cismontana</i>	CSP CNPS: List 1B	Perennial evergreen shrub. Occurs in chaparral and coastal scrub on sandstone or gabbro soils. From 420 to 3,825 ft in elevation.	May–July	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Allen's pentachaeta	<i>Pentachaeta aurea</i> ssp. <i>Allenii</i>	CSP CNPS: List 1B	Annual herb. Occurs in coastal scrub openings and valley and foothill grasslands from 225 to 1,560 ft in elevation.	March–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Brand's star phacelia	<i>Phacelia stellaris</i>	FC CSP CNPS: List 1B	Annual herb. Occurs in coastal dunes and coastal scrub from 3 to 1,200 ft in elevation.	March–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.

Table 3.3: Listed, Proposed, and Special-Status Plant Species and Critical Habitat Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Habitat Present/ Absent	Rationale
White rabbit-tobacco	<i>Pseudognaphalium eucocephalum</i>	CSP CNPS: List 2	Perennial herb. Occurs in chaparral, cismontane woodland, coastal scrub, and riparian woodland on sandy and gravelly soils below 7,000 ft in elevation.	August–November (July–December) ¹	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Nuttall's scrub oak	<i>Quercus dumosa</i>	CSP CNPS: List 1B	Perennial evergreen shrub. Occurs in closed-cone coniferous forest, chaparral, and coastal scrub in sandy, clay loam soils. From 45 to 1,200 ft in elevation.	February–April	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
San Miguel savory	<i>Satureja chandleri</i>	CSP CNPS: List 1B	Perennial shrub. Occurs in chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grasslands, usually in rocky, gabbroic, or metavolcanic soils. From 360 to 3,225 ft in elevation.	March–July	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Chaparral ragwort	<i>Senecio aphanactis</i>	CSP CNPS: List 2	Annual herb. Occurs in chaparral, cismontane woodland, and coastal scrub on drying alkaline flats. From 45 to 2,400 ft in elevation.	January–April	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Salt spring checkerbloom	<i>Sidalcea neomexicana</i>	CSP CNPS: List 2	Perennial herb. Occurs in coastal scrub, chaparral, lower montane coniferous forest, brackish marshes, Mojavean desert scrub, and playas on alkaline, mesic soils. From 45 to 4,590 ft in elevation.	March–June	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Estuary seablite	<i>Suaeda esteroa</i>	CSP CNPS: List 1B	Perennial herb. Occurs in coastal salt marshes and swamps up to 15 ft in elevation.	May–October (January) ¹	A	No suitable habitat for this species is present in the BSA.

Table 3.3: Listed, Proposed, and Special-Status Plant Species and Critical Habitat Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Habitat Present/Absent	Rationale
Parry's tetracoccus	<i>Tetracoccus dioicus</i>	CSP CNPS: List 1B	Perennial deciduous herb. Occurs on dry, stony slopes in chaparral and coastal sage scrub. From 500 to 2,200 ft in elevation.	April–May	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Big-leaved crownbeard	<i>Verbesina dissita</i>	FT CT CSP CNPS: List 1B	Perennial herb. Occurs in southern maritime chaparral and coastal scrub from 135 to 615 ft in elevation along the immediate coast.	April–July	HP	Suitable habitat for this species is present in the BSA. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
La Purisima viguiera	<i>Viguiera purisimae</i>	CSP CNPS: List 2	Shrub. Occurs in coastal bluff scrub and chaparral from 1,095 to 1,275 ft in elevation.	April–September	A	No suitable habitat for this species is present in the BSA.

¹ Months in parentheses are uncommon.

Status:

CE = California Endangered
 CFP = California Fully Protected Species
 CNPS = California Native Plant Society
 CSP = California Special Plant
 CT = California Threatened
 FC = Federal Candidate
 FE = Federal Endangered
 FP, FPE, FPT = Federal Proposed
 FT = Federal Threatened

BSA = biological study area
 ft = feet

CNPS Designations:

List 1A = Plants presumed extinct in California
 List 1B = Plants rare and endangered in California and throughout their range
 List 2 = Plants rare, threatened, or endangered in California but more common elsewhere in their range
 List 3 = Plants needing more information (a review list)
 List 4 = Plants of limited distribution (a watch list)

Habitat Present/Absent:

A = No habitat is present and no further work is needed, or habitat is absent or species was absent in the BSA at the time of the focused survey.
 CH = The project footprint is located in a designated critical habitat unit, but appropriate habitat is not necessarily present.
 HP = Habitat is or may be present.
 O = The species was observed in the BSA at the time of the survey.

3.2.2. Wildlife

The BSA supports habitat suitable for a variety of special-status wildlife species. Based on the literature review, it was determined that 73 special-status wildlife species have the potential to occur in the BSA or in the vicinity of the BSA. Nineteen of these species are federally and/or State-listed as endangered or threatened, or proposed endangered or threatened, or are considered Fully Protected species by the State of California. Further information on these species, including their status, habitat requirements, and potential for occurrence, is summarized in Table 3.4. Species that were observed or have habitat present in the BSA are discussed further in Chapter 4.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/Absent	Rationale
INVERTEBRATES					
San Diego fairy shrimp	<i>Branchinecta sandiegoensis</i>	FE CSA	Endemic to vernal pools in Orange and San Diego Counties. Usually appears in late fall, winter, and spring, when rains fill its small, shallow, seasonal pools.	HP	Limited suitable habitat is present in the BSA. There is one area north of Camino Capistrano that may be suitable for fairy shrimp. However, the probability of this species occurring in the BSA is low.
Globose dune beetle	<i>Coelus globosus</i>	CSA	Inhabits foredunes and sand hummocks in sand dune habitat and is most common beneath dune vegetation. Occurs from Bodega Head in Sonoma County south to Ensenada, Mexico.	A	Suitable habitat is absent from the BSA.
Monarch butterfly (winter roost sites)	<i>Danaus plexippus</i>	CSA	Roosts in wind-protected groves of eucalyptus, Monterey pine, and cypress with water sources nearby. Occurs along the coast from northern Mendocino County to Baja California, Mexico.	HP	Suitable winter roost habitat is present in the BSA, but no roosts are known from the area.
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	FE CSA	Found in warmwater pools (i.e., large, deep pools that retain water into the warm season), and vernal pools in Orange, Riverside, Los Angeles, Ventura, and San Diego Counties.	A	Suitable habitat is absent from the BSA.
FISH					
Tidewater goby	<i>Eucyclogobius newberryi</i>	FE SSC	Found in shallow lagoons and lower stream reaches in brackish-water habitats. Occurs along the California coast from the mouth of the Smith River to San Diego County.	A	Suitable habitat is absent from the BSA.
Partially armored threespine stickleback	<i>Gasterosteus aculeatus microcephalus</i>	CSA	Occurs in slow-water stream sections with mud or sand bottoms in the Los Angeles Basin south coastal streams. Known to occur in upper San Juan Creek.	HP	Limited suitable habitat is present in the BSA.
Arroyo chub	<i>Gila orcuttii</i>	SSC	Occurs in slow-water stream sections with mud or sand bottoms in the Los Angeles Basin south coastal streams. Known to occur in San Juan Creek.	HP	Limited suitable habitat is present in the BSA.
Southern steelhead	<i>Oncorhynchus mykiss irideus</i>	FE SSC	Occurs in stream habitats containing runs, low-gradient riffles, mid-channel pools, and lateral scour pools associated with bedrock. Occurred in lower San Juan Creek historically, but has apparently not been recorded in decades.	HP	Limited suitable habitat is present in the BSA.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/ Absent	Rationale
AMPHIBIANS					
Arroyo toad	<i>Anaxyrus (Bufo) californicus</i>	FE SSC	Found in semi-arid regions near washes or intermittent streams. Often found near streams with sandy banks, gravel washes, and riparian vegetation.	HP	Marginally suitable habitat for this species is present in the BSA.
Western spadefoot	<i>Spea hammondi</i>	SSC	Occurs primarily in grassland and other relatively open habitats. Found in elevations ranging from sea level to 4,500 ft. Requires temporary pools for breeding.	HP	Marginally suitable habitat for this species is present in the BSA.
Coast range newt	<i>Taricha torosa torosa</i>	SSC	Breeds in ponds, reservoirs, and slow-moving streams; uses nearby upland areas, including grassland, chaparral, and woodland. Occurs in coastal drainages from Mendocino County south to San Diego County, with populations from Monterey County south designated as sensitive.	A	Suitable habitat is absent from the BSA.
REPTILES					
Southwestern pond turtle	<i>Actinemys marmorata pallida</i>	SSC	Occurs in a variety of habitats, including woodland, grassland, and open forest. Thoroughly aquatic, existing in high-quality ponds, marshes, rivers, streams, and irrigation ditches that have rocky or muddy bottoms. Requires basking sites such as partially submerged logs, vegetation mats, or open mud banks.	HP	Marginally suitable habitat for this species is present in the BSA.
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	SSC	Inhabits moist, loose soil and humus from central California to northern Baja California. Rarely seen above ground.	HP	Suitable habitat for this species is present in the BSA.
Orange-throated whiptail	<i>Aspidoscelis hyperythra</i>	SSC	Inhabits low-elevation coastal scrub, chaparral, and valley hardwood habitats. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food, termites.	HP	Marginally suitable habitat for this species is present in the BSA.
Coastal western whiptail	<i>Aspidoscelis tigris stejnegeri</i>	CSA	Occurs in deserts and semi-arid areas with sparse vegetation. Often found in woodland and riparian areas.	HP	Marginally suitable habitat for this species is present in the BSA.
San Diego banded gecko	<i>Coleonyx variegatus abbotti</i>	CSA	Found in granite or rocky outcrops in coastal scrub and chaparral habitats.	A	Suitable habitat is absent from the BSA.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/ Absent	Rationale
Northern red-diamond rattlesnake	<i>Crotalus ruber rubber</i>	SSC CSA	Associated with chaparral, woodland, grassland, and desert communities from Los Angeles County to Baja California Sur. Prefers rocky areas with dense vegetation. Needs rodent burrows, cracks in rocks, or surface cover objects for shelter.	HP	Marginally suitable habitat for this species is present in the BSA.
San Bernardino ring-necked snake	<i>Diadophis punctatus modestus</i>	CSA	Found under surface objects along drainage courses, in mesic chaparral and oak and walnut woodland communities.	HP	Suitable habitat for this species is present in the BSA.
San Diego horned lizard	<i>Phrynosoma coronatum</i> (blainvillii population)	SSC	Occurs in coastal scrub, open chaparral, riparian woodland, and annual grassland habitats that support adequate prey species.	HP	Marginally suitable habitat for this species is present in the BSA; however, no food sources (e.g., harvester ants) were observed during surveys.
Two-striped garter snake	<i>Thamnophis hammondi</i>	SSC	Highly aquatic. Found in or near permanent fresh water. Often found along streams with rocky beds and riparian growth.	HP	Marginally suitable habitat for this species is present in the BSA.
BIRDS					
Cooper's hawk	<i>Accipiter cooperii</i>	CSA (nesting)	Nests in a wide variety of woodland and forest habitats.	HP	Suitable nesting habitat for this species is present in the BSA.
Tricolored blackbird	<i>Agelaius tricolor</i>	BCC SSC (nesting)	Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs, and forages in grassland and cropland habitats. Seeks cover for roosting in emergent wetland vegetation, especially cattails and tules, and also in trees and shrubs. Occurs in nondesert lowlands throughout California.	HP	Suitable foraging habitat is present in the BSA but suitable nesting habitat is absent.
Southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	CSA	Resident in southern California coastal scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	HP	Suitable habitat for this species is present in the BSA.
Grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC (nesting)	Occurs in dense grassland, preferring native grassland with a mixture of forbs and shrubs.	A	Suitable nesting habitat is absent from the BSA.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/ Absent	Rationale
Golden eagle	<i>Aquila chrysaetos</i>	BCC CFP (nesting and nonbreeding/ wintering)	Occurs in grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests primarily in rugged mountainous country. Uncommon resident in southern California.	A	Suitable habitat is absent from the BSA.
Great blue heron	<i>Ardea herodias</i>	CSA (rookery site)	Nests in tall trees in proximity to foraging areas; occurs in marshes, lake margins, tide flats, rivers, and streams, and wet meadows. Colonial nester.	HP	Marginally suitable nesting habitat for this species is present in the BSA.
Long-eared owl	<i>Asio otus</i>	SSC (nesting)	Rare resident in southern California coastal and foothill areas and uncommon resident in desert areas. Occurs in dense willow-riparian woodland and oak woodland. Breeds from valley foothill hardwood up to ponderosa pine habitat.	A	Suitable habitat is absent from the BSA.
Burrowing owl	<i>Athene cunicularia</i>	BCC SSC (burrow sites)	Burrows in open, dry annual or perennial grasslands; deserts; and scrublands characterized by low-growing vegetation. Subterranean nester, dependent on burrowing mammals, most notably the California ground squirrel.	HP	Limited, marginally suitable habitat for this species is present in the BSA. Some suitable burrows were observed during the 2009 surveys.
Costa's hummingbird	<i>Calypte costae</i>	CSA (nesting)	Found primarily in deserts; arid, brushy foothills; and chaparral. Wanders widely.	HP	Suitable habitat for this species is present in the BSA.
San Diego cactus wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	BCC SSC	Occurs in coastal sage scrub habitats. Requires tall <i>Opuntia</i> cactus for nesting and roosting.	A	Suitable habitat is absent from the BSA.
Lawrence's goldfinch	<i>Carduelis lawrencei</i>	BCC CSA (nesting)	Usually inhabits oak woodlands, but also uses chaparral, riparian woodlands, coastal scrub, forests, pinyon-juniper woodlands; plantings of cypress, cedars, or junipers; tall weeds; and adjacent rural residential areas. A water source such as a stream, small lake, or pond within 0.3 mi is probably required. Nests throughout much of the nondesert part of California and Baja California.	HP	Marginally suitable habitat for this species is present in the BSA.
Western snowy plover (coastal population)	<i>Charadrius alexandrinus nivosus</i>	FT BCC SSC (nesting)	Occurs in sandy beaches, salt pond levees, and shores of large alkali lakes; needs sandy, gravelly, or friable soils for nesting.	A	Suitable habitat is absent from the BSA.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/ Absent	Rationale
Lark sparrow	<i>Chondestes grammacus</i>	CSA (nesting)	Inhabits open areas with scattered bushes or trees. Breeds throughout much of western North America and winters from the southern United States to southern Mexico.	HP	Marginally suitable nesting habitat for this species is present in the BSA.
Northern harrier	<i>Circus cyaneus</i>	SSC (nesting)	Occurs in grasslands and marshy habitats in southern California. Uncommon resident in open desert and brushlands.	A	Suitable nesting habitat is absent from the BSA.
California yellow warbler	<i>Dendroica petechia brewsteri</i>	SSC (nesting)	Occurs in riparian woodland while nesting in the western United States and northwestern Baja California; more widespread in brushy areas and woodlands during migration season and winter, when it occurs from western Mexico to northern South America.	HP	Suitable foraging habitat is present but suitable nesting habitat is limited in the BSA
White-tailed kite	<i>Elanus leucurus</i>	CFP (nesting)	Breeds in riparian trees such as oaks, willows, and cottonwoods in lower-elevation areas, particularly coastal valleys and plains.	HP	Suitable habitat for this species is present in the BSA.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE CE (nesting)	Breeds and nests in riparian forest with dense understory. Rare and local in southern California.	A	Suitable habitat for this species is absent from the BSA.
Merlin	<i>Falco columbarius</i>	CSA (nonbreeding/ wintering)	Occurs in open country; breeds in the Holarctic Region and winters south to the tropics. Rare fall migrant and winter visitor to southwestern California.	HP	Suitable habitat for this species is present in the BSA.
American peregrine falcon	<i>Falco peregrinus</i>	FD BCC CE CFP (nesting)	Widespread, but scarce and local throughout North America. Prefers wetlands near high cliffs; few known to nest in urban settings on tall buildings.	A	Suitable foraging habitat is present in the BSA but suitable nesting habitat is absent.
Saltmarsh common yellowthroat	<i>Geothlypis trichas sinuosa</i>	BCC SSC	Nests primarily in brackish and freshwater marshes in the San Francisco Bay area and disperses, at least historically, along the California coast as far north as Humboldt Bay and as far south as San Diego.	HP	Suitable wintering habitat for this species is present in the BSA.
Yellow-breasted chat	<i>Icteria virens</i>	SSC (nesting)	Occurs in riparian thickets of willows and brushy tangles near watercourses. Nests in riparian woodland throughout much of western North America. Winters in Central America.	HP	Marginally suitable nesting habitat for this species is present in the BSA.
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC (nesting)	Occurs in open fields with scattered trees or shrubs, open country with short vegetation, pastures, old orchards, cemeteries, golf courses, riparian areas,	HP	Suitable habitat for this species is present in the BSA.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/ Absent	Rationale
			and open woodlands. Found in open country in much of North America.		
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	CSA (rookery site)	Occurs in a wide range of wetland habitats in much of the temperate and tropical zones worldwide. Nests primarily in trees, sometimes in urban habitats.	HP	Marginally suitable nesting habitat for this species is present in the BSA.
Belding's savannah sparrow	<i>Passerculus sandwichensis beldingi</i>	CE	Inhabits coastal salt marshes from Santa Barbara through San Diego County. Nests in <i>Salicornia</i> on and around the margins of tidal flats.	A	Suitable habitat for this species is absent from the BSA.
California brown pelican	<i>Pelecanus occidentalis</i>	FD CD	Occurs in a wide range of coastal habitats. Nests primarily on steep, rocky slopes.	A	Suitable habitat for this species is absent from the BSA.
Nuttall's woodpecker	<i>Picoides nuttallii</i>	CSA (nesting)	Resident in oak and riparian woodland throughout most of California west of the deserts.	HP	Limited suitable nesting habitat for this species is present in the BSA.
Coastal California gnatcatcher	<i>Poliophtila californica californica</i>	FT SSC	Obligate, permanent resident of coastal scrub below 2,500 ft in elevation in southern California.	HP, CH, O	Observed during the 2009 surveys. Suitable habitat for this species is present in the BSA.
Light-footed clapper rail	<i>Rallus longirostris levipes</i>	FE CE CFP	Found in salt marshes traversed by tidal sloughs where cordgrass and pickleweed are the dominant vegetation.	A	Suitable habitat is absent from the BSA.
Bank swallow	<i>Riparia riparia</i>	CT (nesting)	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, and the ocean to dig nesting holes.	A	Suitable nesting habitat is absent from the BSA.
Allen's hummingbird	<i>Selasphorus sasin</i>	CSA (nesting)	Nests in residential areas, chaparral, open oak woodland, and riparian woodland in coastal areas the length of California. Generally restricted to exotic vegetation in urban areas in winter.	HP	Suitable nesting habitat for this species is present in the BSA.
California least tern	<i>Sternula antillarum browni</i>	FE CE CFP (nesting colony)	Nests along the coast from San Francisco Bay to northern Baja California. Breeds on bare or sparsely vegetated, flat substrates such as sandy beaches, alkali flats, landfills, or paved areas.	A	Suitable nesting habitat is absent from the BSA.
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE BCC CE (nesting)	Occurs in moist thickets and riparian areas that are predominantly composed of willow and mulefat.	HP, O	Marginally suitable nesting habitat for this species is present in the BSA.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/ Absent	Rationale
MAMMALS					
Pallid bat	<i>Antrozous pallidus</i>	SSC	Occurs in varied habitats in western North America; found throughout California in grasslands, shrublands, woodlands, deserts, and forest. Primarily day roosts in bridges, hollows or crevices of trees, or buildings. Occasionally roosts in mines, caves, and cliff/rock crevices. Night roosts may be more open sites, such as porches, open buildings, and bridges.	HP	Suitable habitat for this species is present in the BSA.
Ringtail	<i>Bassariscus astutus</i>	CFP	Found in dry, rocky, or mountainous areas with scattered oaks and conifers. Dens among rock crevices, in burrows, or hollow trees by day and emerges after dark.	A	Suitable habitat is absent from the BSA.
Dulzura pocket mouse	<i>Chaetodipus californicus femoralis</i>	SSC	Found in a range of habitats, but generally with sparse cover.	A	Suitable habitat is present in the BSA, but the BSA is outside the range of this subspecies.
Northwestern San Diego pocket mouse	<i>Chaetodipus fallax fallax</i>	SSC	Occurs in a variety of habitats, including coastal scrub, chaparral, and grassland, and is attracted to grass-chaparral edges in San Diego County.	A	Suitable habitat is present in the BSA, but the BSA is outside the range of this subspecies.
Mexican long-tongued bat	<i>Choeronycteris Mexicana</i>	SSC	Occasionally found in San Diego County. Feeds on nectar and pollen of night-blooming succulents. Roosts in relatively well-lit caves as well as in and around buildings.	HP	Suitable habitat for this species is present in the BSA.
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SSC	Found in all but subalpine and alpine habitats throughout California. Requires caves, mines, tunnels, buildings, or other similar structures for roosting. Occasionally roosts in hollow spaces of bridges or buildings. Will occasionally roost in hollow trees. Highly sensitive to disturbance.	HP	Suitable habitat for this species is present in the BSA.
Mexican long-tongued bat	<i>Choeronycteris Mexicana</i>	SSC	Found in a variety of habitats in the southwestern United States through Mexico to El Salvador and Honduras. In California, this species has been observed in San Diego County, likely as a seasonal migrant. Feeds on nectar and pollen of night-blooming succulents; may visit hummingbird feeders. Roosts in caves, mines, and occasionally buildings. Not known to use bridges for roosting.	A	Suitable habitat is present in the BSA, but the BSA is outside the range of this species.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/ Absent	Rationale
Stephens' kangaroo rat	<i>Dipodomys stephensi</i>	FE CT	Found in plant communities transitional between grassland and coastal sage scrub, with perennial vegetation cover of less than 50 percent. Most commonly associated with <i>Artemesia tridentata</i> , <i>Eriogonum fasciculatum</i> , and <i>Erodium</i> spp. Requires well-drained soils with compaction characteristics suitable for burrow construction. Occurs only in western Riverside County and northern San Diego County below 3,000 ft in elevation. In northeastern Riverside County, known only from east of Interstate 15.	A	Suitable habitat is present in the BSA, but the BSA is outside the range of this species.
Coronado skink	<i>Eumeces skiltonianus interparietalis</i>	SSC	Occurs in a variety of plant communities, including coastal sage scrub, mesic chaparral, oak woodland, pinyon-juniper woodland, and riparian woodland to pine forests. Found west of the deserts from Riverside and San Diego Counties to Baja California.	HP	Suitable habitat for this species is present in the BSA.
Western mastiff bat	<i>Eumops perotis californicus</i>	SSC	Ranged historically throughout much of the southwestern United States and northwestern Mexico. In California, most records are from rocky areas at low elevations. Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in vertical cliff faces, high buildings, trees, and tunnels throughout southwestern California. May roost in tall bridges. Foraging individuals wander widely.	HP	Suitable roosting habitat for this species is present in the BSA.
Western red bat	<i>Lasiurus blossevillii</i>	SSC	Ranges throughout most of California west of the deserts. Forages over a wide range of habitats, but is often associated with intact riparian habitat, and particularly with willows, cottonwoods, and sycamores. Typically solitary, roosting in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	HP	Suitable habitat for this species is present in the BSA.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/ Absent	Rationale
Hoary bat	<i>Lasiurus cinereus</i>	CSA	Widespread in North America and Hawaii and ranges throughout most of California. Forages over a wide range of habitats, but prefers open habitats with access to trees (for roosting) and water. Typically solitary, roosting in the foliage of shrubs or coniferous and deciduous trees. Roosts are usually near the edge of a clearing.	HP	Suitable habitat for this species is present in the BSA.
Western yellow bat	<i>Lasiurus xanthinus</i>	SSC	Found in varied habitats from the southwestern United States to southern Mexico; often associated with palms and desert riparian habitats. In southern California, occurs in palm oases and in residential areas with untrimmed palm trees. Roosts primarily in trees, especially the dead fronds of palm trees, although it has also been documented to roost under the leaves of deciduous trees such as cottonwoods.	HP	Suitable habitat for this species is present in the BSA.
San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	SSC	Occurs in the open country of coastal southern California and northern Baja California.	A	Suitable habitat for this species is not present in the BSA.
Western small-footed myotis	<i>Myotis ciliolabrum</i>	CSA	Occupies a wide variety of habitats, primarily relatively arid wooded and brushy uplands near water. Individuals are known to roost singly or in small groups in cliff and rock crevices, buildings, concrete overpasses, caves, and mines.	HP	Suitable foraging habitat for this species is present in the BSA.
Yuma myotis	<i>Myotis yumanensis</i>	CSA	Occurs in a variety of habitats, including riparian areas, arid scrublands and deserts, and forests. Optimal habitats are open forests and woodlands with sources of water over which to feed. The species roosts in bridges, culverts, buildings, rock crevices, caves, mines, and trees. May also occasionally roost in swallow nests.	HP	Suitable habitat for this species is present in the BSA.
San Diego desert woodrat	<i>Neotoma lepida intermedia</i>	SSC	Occurs in coastal sage scrub and chaparral; most commonly associated with cactus and rocky cliffs and slopes. Found in coastal southern California from San Diego County to San Luis Obispo County.	HP	Marginally suitable nesting habitat for this species is present in the BSA.

Table 3.4: Listed, Proposed, and Special-Status Wildlife Species Potentially Occurring or Known to Occur in and in the Vicinity of the BSA

Common Name	Scientific Name	Status Listing	Habitat and Comments	Habitat Present/Absent	Rationale
Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	SSC	Primarily occurs in arid habitats from the southwestern United States to South America, but has been recorded far "out of range" during migration. Roost sites include cliffs, buildings, and hollow trees.	HP	Suitable habitat for this species is present in the BSA.
Big free-tailed bat	<i>Nyctinomops macrotis</i>	SSC	Mainly an inhabitant of rugged, rocky habitats in arid landscapes of southwestern North America. Needs high cliffs or rocky outcrops for roosting. Feeds principally on large moths. Roosts primarily in cliffs/rock crevices and rarely in buildings, caves, and tree cavities. Not known to use bridges for roosting.	HP	Suitable habitat for this species is present in the BSA.
Pacific pocket mouse	<i>Perognathus longimembris pacificus</i>	FE SSC	Inhabits friable soils along the narrow coastal plains from the northern Mexican border to Los Angeles County.	A	Suitable habitat for the species not present in the BSA.
American badger	<i>Taxidea taxus</i>	SSC	Occurs throughout much of North America. Primary habitat requirements seem to be sufficient food and friable soils in relatively open, uncultivated ground in grasslands, woodlands, and deserts.	A	Suitable habitat for the species not present in the BSA.

Status:

BCC = Birds of Conservation Concern
 CD = California Delisted
 CE = California Endangered
 CFP = California Fully Protected Species
 CSA = California Special Animal
 CT = California Threatened
 FD = Federal Delisted
 FE = Federal Endangered
 FP, FPE, FPT = Federal Proposed
 FT = Federal Threatened
 SSC = California Species of Special Concern

BSA = biological study area

ft = feet

mi = mile

Habitat Present/Absent:

A = No habitat is present and no further work is needed.
 CH = The BSA is within a designated critical habitat unit, but this does not necessarily mean that appropriate habitat is present.
 HP = Habitat is or may be present.
 O = The species was observed in the BSA during surveys.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

4.1. Natural Communities of Special Concern

Habitats are considered to be of special concern based on (1) federal, State, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status plants or animals occurring in those habitats. Two primary plant community groups considered important by State and/or local agencies, coastal sage scrub (CSS) and riparian/riverine habitats, were identified in the biological study area (BSA). These communities occur with varied abundance in the BSA. These two sensitive habitats are described in more detail in the following sections and are shown on the Biological Resources figures in Appendix J, Biological Resources. Wetlands and waters of the United States are also considered sensitive by both federal and State agencies, but are discussed in more detail in Section 4.4. There are no established wildlife movement corridors within the BSA.

The figures in Appendix K, Project Impacts to Biological Resources, illustrate where the maximum extent of impacts from all the Interstate 5 (I-5) High-Occupancy Vehicle (HOV) Lane Extension Project Build Alternatives and their design options will impact biological resources. Project impacts are based on overlaying the conceptual project designs over maps showing these biological resources.

4.1.1. Discussion of Natural Community – Coastal Sage Scrub Habitat

CSS is generally a patchy vegetation community found in diverse habitat mosaics and is dominated by a suite of shrub species found in southern California. Shrub cover is dense and generally continuous, with low moisture content. Steep, xeric slopes and quickly draining soils characterize the CSS community. Annual herbs, including weedy grasses and forbs and native wildflowers, are common in openings and disturbed areas.

CSS has become displaced by spreading urbanization. Many rare and endangered species occur in CSS and associated plant communities. Consequently, degradation and displacement of CSS has resulted in substantial habitat loss for a variety of animal species. Therefore, the California Department of Fish and Game (CDFG) and United States Fish and Wildlife Service (USFWS) have special concern for this habitat type.

4.1.1.1. SURVEY RESULTS

As shown in Appendix J, Biological Resources, this habitat type occurs at various areas in the BSA. Several patches of CSS were identified on both sides of the State right-of-way, just north of the Camino Las Ramblas/State Route 1 (SR-1)/Via Sacramento arterial interchange. Another area of CSS was identified along the west side of the State right-of-way, just south of the Camino Estrella arterial interchange. The last area of CSS identified was on the west side of the State right-of-way, just north of the Avenida Vista Hermosa arterial interchange. Although the areas are degraded by nonnative invasive species, they are of good quality.

4.1.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

The following measures will be incorporated to avoid and minimize project impacts to CSS habitat:

- Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around CSS adjacent to the project disturbance limits to designate Environmentally Sensitive Areas (ESAs) to be avoided and preserved. No grading or fill activity of any type will be permitted in these ESAs. In addition, heavy equipment, including motor vehicles, will not be allowed to operate in the ESAs. All construction equipment will be operated in such a manner as to prevent accidental damage to nearby ESAs. No structure of any kind, or incidental storage of equipment or supplies, will be allowed in these protected zones. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.
- In order to avoid impacts to nesting birds, any native or exotic vegetation removal, tree trimming activities, or bridge demolition will occur outside of the nesting season (February 15–August 31). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist will conduct a preconstruction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or clearing will not be conducted in this zone until the biologist determines that the young have fledged or the nest is no longer active.
- Inspection and cleaning of construction equipment will be performed to minimize the importation of nonnative plant material. Eradication strategies (i.e., weed control) will be implemented should an invasion of nonnative plant species occur.
- A biologist will monitor all vegetation clearing and any other construction activities (at the discretion of a qualified biologist) for the duration of the project in areas

adjacent to ESAs to flush any wildlife species present prior to construction and to ensure compliance with and proper implementation of vegetation removal, best management practices (BMPs), and ESAs, and that all biological resource-related avoidance and minimization measures are properly adhered to.

4.1.1.3. PROJECT IMPACTS

The I-5 HOV Lane Extension Project would result in direct permanent impacts to CSS habitat through disturbance and/or removal of existing vegetation. Permanent impacts may include complete removal and extensive encroachment that may have substantial detrimental impacts to the long-term viability of the community and the plant and animal species associated with this natural community. Although the areas are degraded by nonnative invasive species, they are of good quality and are suitable for some special-status wildlife species (e.g., coastal California gnatcatcher [CAGN]).

Table 4.1 shows the amount of CSS that will be permanently impacted by each Build Alternative. The project is expected to impact between 0.3 ac and 0.4 ac habitat (depending on the Alternative and Option), which is approximately 3 percent of the total habitat within the BSA.

Table 4.1: Permanent Project Impacts to CSS by Build Alternative (acres)

Vegetation Type	Alternative 2		Alternative 3		Alternative 4	
	Design Option A	Design Option B	Design Option A	Design Option B	Design Option A	Design Option B
CSS	0.5	0.5	0.5	0.5	0.4	0.4

CSS = coastal sage scrub

The I-5 Lane Extension Project would result in direct temporary impacts to CSS. Areas of temporary effects will only be affected during construction to allow for construction and equipment staging. Temporary effects to CSS will be limited to incidental encroachment; otherwise, effects are considered permanent. Alternatives 2, 3 and 4 are all expected to result in 0.31 ac of temporary impacts for Design Option A and 0.32 ac for Design Option B. A small quantity of these temporary impacts to CSS (0.018 ac) is within CAGN-designated critical habitat. Project impacts to CSS occupied by CAGN or in CAGN-designated critical habitat are discussed further in Section 4.3.5.3, Project Impacts (on CAGN).

Based on the *I-5 HOV Lane Extension Project Approval/Environmental Document (PA/ED) Traffic Study* (Austin-Foust Associates, Inc. May 2010), the total daily volume of traffic will be the same with or without the project due to the current expected build out of the area. The I-5 HOV Lane Extension Project is expected to reduce congestion during peak hours. Therefore, construction of the Build Alternatives is not expected to substantially increase indirect impacts due to automobile traffic and litter in the area. In addition, based on the *Noise Study Report* (LSA Associates, Inc., August 2010), project-related noise levels along the project segment of I-5 are expected to be relatively the same with or without the Build Alternatives. Although noise will not increase as a result of the Build Alternatives, noise impacts are expected to extend into the surrounding natural habitat by approximately the same distance that I-5 is being widened. Site design, source control, and treatment BMPs will be incorporated into the project to help avoid, minimize, and mitigate potential indirect adverse impacts to CSS due to increased traffic, noise, and impervious surfaces.

4.1.1.4. COMPENSATORY MITIGATION

CSS in the BSA is not protected by any federal, State, or local regulations, with the exception of CAGN-designated critical habitat and/or occupied areas. For areas that are not protected, no compensatory mitigation is required. For CSS occupied by CAGN or within CAGN-designated critical habitat, the proposed minimum mitigation ratios of 3:1 for permanent impacts and 1:1 for temporary impacts are consistent with USFWS standards. Compensatory mitigation would require on-site restoration in the State right-of-way or off-site acquisition of conservation lands and restoration efforts to enhance or create CSS. Options for compensatory mitigation will be evaluated through coordination among the Orange County Transportation Authority (OCTA), the California Department of Transportation (Caltrans), and the resource agencies. Project impacts to CSS occupied by CAGN or in CAGN-designated critical habitat are discussed further in Section 4.3.5.3, Project Impacts (on CAGN).

In addition, on February 3, 1999, President Clinton signed Executive Order (EO) 13112 (Invasive Species), requiring federal agencies to combat the introduction or spread of invasive species in the United States. Therefore, in compliance with EO 13112, weed control will be implemented, and temporarily impacted areas will be revegetated with plant species that prevent the introduction or spread of invasive species. Details regarding the weed control for the proposed project are described in Section 5.4, Invasive Species.

4.1.1.5. CUMULATIVE IMPACTS

As described above, the I-5 HOV Lane Extension Project will result in the permanent removal of CSS and may result in adverse impacts on the plant and animal species associated with this natural community. Future development in areas outside the project area may slightly increase traffic noise and result in additional nighttime light spill into preserved areas, as well as the continued removal of CSS. Therefore, the impacts of the I-5 HOV Lane Extension Project, in combination with reasonably foreseeable development in the vicinity, may incrementally contribute to the cumulative adverse impacts on this natural community and the plant and animal species associated with it.

However, avoidance and minimization measures have been included (above) to address permanent and temporary project impacts to CSS. It is expected that other cumulative projects in the area that impact CSS would also include appropriate avoidance, minimization, mitigation, and compensation measures to address the permanent and temporary impacts of those projects on CSS.

4.1.2. Discussion of Natural Community – Riparian/Riverine Habitats

Riparian/riverine habitats, such as those found in the BSA, were formerly abundant along the major rivers of coastal southern California but have been substantially reduced by urban expansion, flood control, and channel improvements (Holland 1986). The typical association of these riparian habitat types with drainages means that they are protected under Section 1600 of the California Fish and Game Code and, to a certain extent, by Sections 401 and 404 of the Clean Water Act (CWA). These habitats are considered high-quality wildlife habitats because they provide protective cover, water, and food for a variety of wildlife species. Many animal species are riparian habitat obligates. Other animals, including large mammals, require access to water and use bands of riparian habitat as wildlife corridors. As such, CDFG regulates riparian areas to the extent that those areas are associated with the banks of a stream or lake shorelines.

4.1.2.1. SURVEY RESULTS

Two riparian/riverine Natural Communities of Special Concern occur in the BSA: riparian scrub and freshwater marsh. These riparian communities occur at a few areas along the project alignment, as shown on the figures in Appendix J, Biological Resources. Riparian scrub vegetation occurs along the east side of the State right-of-way, north of the Camino Las Ramblas/SR-1/Via Sacramento interchange, and on the west side of the State right-of-way, just north of the Avenida Vista Hermosa arterial interchange. Freshwater marsh vegetation was found in one area, on the west side of the State right-of-way, just south of the Camino de Estrella interchange. In addition, a

restoration area (Stonehill Drive Restoration Area) is located in the northbound (NB) I-5 state right-of-way just south of Stonehill Drive. This restoration was put in place as a requirement of United States Army Corps of Engineers (Corps) Nationwide Permit No. SPL-2006-1961-SJH, CDFG Streambed Authorization Agreement No. 1600-2006-0405-R5, and Regional Water Quality Control Board (RWQCB) Cleanup and Abatement Order No. R9-2-6-131. Additional information regarding the Stonehill Drive Restoration Area is provided in Section 4.4, Jurisdictional Waters, Regulatory Permitting, and Compensatory Mitigation. All of these areas are highly degraded by nonnative invasive species and human encroachment and are of poor quality.

4.1.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

The following measures will be incorporated to avoid and minimize project impacts to riparian/riverine habitats:

- Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around riparian and riverine communities adjacent to the project disturbance limits to designate ESAs to be preserved. No grading or fill activity of any type will be permitted within ESAs. In addition, no construction activities, materials, or equipment will be allowed within ESAs. All construction equipment will be operated in such a manner as to prevent accidental damage to nearby ESAs. No structure of any kind, or incidental storage of equipment or supplies, will be allowed in ESAs. Silt fence barriers will be installed at the ESA boundaries to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.
- In order to avoid impacts to nesting birds, any native or exotic vegetation removal, tree trimming activities, or bridge demolition will occur outside of the nesting season (February 15–August 31). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist will conduct a preconstruction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or clearing will not be conducted in this zone until the biologist determines that the young have fledged or the nest is no longer active.
- All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated nonsensitive upland habitat areas. The designated upland areas will be located so as to prevent runoff from any spills from entering waters of the United States.

- A construction Storm Water Pollution Prevention Plan (SWPPP) and soil erosion and sedimentation plan will be developed to minimize erosion and identify specific pollution prevention measures that will eliminate or control potential point and nonpoint pollution sources on site during construction and operation. The SWPPP will identify specific BMPs to be implemented during construction so as not to cause or contribute to an exceedance of any water quality standard. In addition, the SWPPP will contain provisions for changes to the plan, such as alternative mechanisms, if necessary, during project design and/or construction to achieve the stated goals and performance standards.
- Weed control will be implemented to minimize the importation of nonnative plant material during and after construction. Eradication strategies will be implemented should an invasion of nonnative plant species occur.
- A biologist will monitor all vegetation clearing and any other construction activities (at the discretion of a qualified biologist) for the duration of the project in areas adjacent to ESAs to flush any wildlife species present prior to construction and to ensure compliance with and proper implementation of vegetation removal, BMPs, and ESAs, and that all biological resource-related avoidance and minimization measures are properly adhered to.

4.1.2.3. PROJECT IMPACTS

The I-5 HOV Lane Extension Project would result in direct permanent impacts to riparian/riverine habitats through disturbance and/or removal of existing vegetation. Permanent impacts may include complete removal and heavy encroachment. While direct permanent impacts may have detrimental impacts to the long-term viability of the community and the plant and animal species associated with this natural community, the areas are highly degraded by nonnative invasive species and human encroachment and are of poor quality. While the riparian/riverine habitat within the BSA is of poor quality, it is still suitable for species with broader habitat requirements (e.g. Allen's hummingbird).

The I-5 HOV Lane Extension Project is not expected to result in any temporary impacts to riparian/riverine habitats. Should that change, temporary impacts will be limited to incidental encroachment; otherwise, impacts will be considered permanent.

Table 4.2 shows the amount of riparian/riverine habitat that will be permanently impacted by each Build Alternative. The project is expected to impact 0.07 ac of riparian/riverine habitat, which is approximately 9 percent of the total habitat within the BSA. All of these areas are highly degraded by nonnative invasive species and human encroachment and

are of poor quality. Although the project is expected to permanently impact riparian/riverine habitat, not all of these areas are subject to jurisdiction under Sections 401 and 404 of the CWA or under Section 1600 of the Fish and Game Code. Riparian/riverine areas subject to regulatory jurisdiction are discussed further in Section 4.4, Jurisdictional Waters, Regulatory Permitting, and Compensatory Mitigation.

Table 4.2: Permanent Project Impacts to Alternative Riparian/Riverine Habitats by Build Alternative (acres)

Vegetation Type	Alternative 2		Alternative 3		Alternative 4	
	Design Option A	Design Option B	Design Option A	Design Option A	Design Option B	Design Option A
Riparian Scrub	0.07	0.07	0.07	0.07	0.07	0.07
Freshwater Marsh	0.0	0.0	0.0	0.0	0.0	0.0
Total Impacts	0.07	0.07	0.07	0.07	0.07	0.07

Based on the *I-5 HOV Lane Extension PA/ED Traffic Study*, the total daily volume of traffic will be the same with or without the project due to the current expected build out of the area. The I-5 HOV Lane Extension Project is expected to reduce congestion during peak hours. Therefore, construction of the Build Alternatives is not expected to substantially increase indirect impacts due to automobile traffic and litter in the area. In addition, based on the *Noise Study Report*, project-related noise levels along the project segment of I-5 are expected to be relatively the same with or without the Build Alternatives. Although noise will not increase as a result of the Build Alternatives, noise impacts are expected to extend into the surrounding natural habitat by approximately the same distance that I-5 is being widened. Site design, source control, and treatment BMPs will be incorporated into the project to help avoid, minimize, and mitigate potential indirect adverse impacts to riparian/riverine communities due to increased traffic, noise, and impervious surfaces.

4.1.2.4. COMPENSATORY MITIGATION

As described in Section 4.4, none of the Option A Build Alternatives are expected to impact any areas potentially jurisdictional by the Corps (under Section 404 of the CWA), RWQCB (under Section 401 of the CWA), or CDFG (under Section 1600 of the Fish and Game Code). Because of this, no compensatory mitigation from these agencies is expected for Option A at this time.

Option B for all Build Alternatives is expected to impact areas potentially jurisdictional by the Corps, RWQCB, or CDFG. Should Option B from any of the Build Alternatives be selected, compensatory mitigation may be required.

In addition, the I-5 HOV Lane Extension Project is expected to result in direct permanent impacts to riparian/riverine habitats believed not to be subject to jurisdiction under Sections 404 and 401 of the CWA or under Section 1600 of the California Fish and Game Code. Because impacts to these nonjurisdictional areas are not substantial, no mitigation is expected to be required under CEQA. If the agencies assert jurisdiction over an area believed not to be subject to their jurisdiction and the project impacts this area, compensatory mitigation may be required.

If required, compensatory mitigation will be mitigated at a minimum mitigation-to-effect ratio of 3:1 for permanent effects and 1:1 for temporary effects, which is consistent with the Corps and CDFG policies for no net loss of riparian/riverine habitats (e.g., wetlands) standards. This mitigation may be accomplished through the payment of an in-lieu fee, habitat restoration and/or enhancement of on- or off-site areas, or another mechanism approved by the resource agencies.

4.1.2.5. CUMULATIVE IMPACTS

As described above, the I-5 HOV Lane Extension Project will result in the permanent removal of riparian/riverine habitat and may result in adverse impacts on the plant and animal species associated with this natural community. Future development in areas outside the project area may slightly increase traffic noise and result in additional nighttime light spill into preserved areas, as well as the continued removal of riparian/riverine habitat. Therefore, the impacts of the I-5 HOV Lane Extension Project, in combination with reasonably foreseeable development in the vicinity, may incrementally contribute to the cumulative adverse impacts on this natural community and the plant and animal species associated with it. However, avoidance and minimization measures and compensatory mitigation have been included (above) to address permanent and temporary project impacts to riparian/riverine habitat. It is expected that other cumulative projects in the area that impact riparian/riverine habitat would also include appropriate avoidance, minimization, mitigation, and compensation measures to address the permanent and temporary impacts of those projects on riparian/riverine habitat.

4.2. Special-Status Plant Species

A total of 8 of the 48 special-status plant species with potential to occur in the BSA are federally and/or State-listed as endangered, threatened, or candidate species: coastal dunes milk vetch, Encinitas baccharis, thread-leaved brodiaea, Laguna Beach dudleya, San Diego button-celery, Moran's navarretia, Brand's star phacelia, and big-leaved crownbeard. As noted in Table 3.3, suitable habitat for coastal dunes milk-vetch and Encinitas baccharis is not present in the BSA and, therefore, these species are not discussed further in this analysis.

The results of surveys, critical habitat discussion, minimization/mitigation measures, project impacts, and cumulative impacts for the other six listed species are discussed in this section. In addition, other special-status plant species, including those listed by the California Native Plant Society (CNPS) as List 1B, 2, 3, and 4 with suitable habitat occurring in the BSA, are discussed in this section.

4.2.1. Discussion of Thread-leaved Brodiaea

Thread-leaved brodiaea is a perennial bulbiferous herb that occurs primarily in vernal pools but is also found in chaparral, cismontane woodlands, coastal scrub, playas, and valley and foothill grasslands. It is usually found in clay soils from 75 to 3,657 feet (ft) in elevation. This species is federally listed as threatened and State listed as endangered. It is also a CNPS List 1B.1 species.

4.2.1.1. SURVEY RESULTS

Botanical surveys conducted in 2010 during the appropriate blooming period for this species were negative. Therefore, the species is considered absent from the BSA.

4.2.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because this species is considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.1.3. PROJECT IMPACTS

Because this species is considered absent from the BSA, the I-5 HOV Lane Extension Project is not expected to impact this species.

4.2.1.4. COMPENSATORY MITIGATION

Because this species is considered absent from the BSA, no compensatory mitigation is required.

4.2.1.5. CUMULATIVE IMPACTS

Because this species is considered absent from the BSA, it is unlikely that the I-5 HOV Lane Extension Project will contribute to cumulative impacts to this species.

4.2.2. Discussion of Laguna Beach Dudleya

Laguna Beach dudleya is a perennial stoloniferous herb that occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands. It is usually found in thin soil on north-facing sandstone cliffs from 30 to 780 ft in elevation. This species is federally and State listed as threatened. It is also a CNPS List 1B.1 species.

4.2.2.1. SURVEY RESULTS

Botanical surveys conducted in 2010 during the appropriate blooming period for this species were negative. Therefore, the species is considered absent from the BSA.

4.2.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because this species is considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.2.3. PROJECT IMPACTS

Because this species is considered absent from the BSA, the I-5 HOV Lane Extension Project is not expected to impact this species.

4.2.2.4. COMPENSATORY MITIGATION

Because this species is considered absent from the BSA, no compensatory mitigation is required.

4.2.2.5. CUMULATIVE IMPACTS

Because this species is considered absent from the BSA, it is unlikely that the I-5 HOV Lane Extension Project will contribute to cumulative impacts to this species.

4.2.3. Discussion of San Diego Button-Celery

San Diego button-celery is an annual/perennial herb that occurs in coastal scrub, valley and foothill grasslands, and mesic vernal pools from 60 to 1,860 ft in elevation. This species is federally and State listed as endangered. It is also a CNPS List 1B.1 species.

4.2.3.1. SURVEY RESULTS

Botanical surveys conducted in 2010 during the appropriate blooming period for this species were negative. Therefore, the species is considered absent from the BSA.

4.2.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because this species is considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.3.3. PROJECT IMPACTS

Because this species is considered absent from the BSA, the I-5 HOV Lane Extension Project is not expected to impact this species.

4.2.3.4. COMPENSATORY MITIGATION

Because this species is considered absent from the BSA, no compensatory mitigation is required.

4.2.3.5. CUMULATIVE IMPACTS

Because this species is considered absent from the BSA, it is unlikely that the I-5 HOV Lane Extension Project will contribute to cumulative impacts to this species.

4.2.4. Discussion of Moran's Navarretia

Moran's navarretia is an annual herb that occurs in chenopod scrub, assorted shallow freshwater marshes and swamps, playas, and vernal pools from 90 to 3,900 ft in elevation. This species is federally listed as threatened and is a CNPS List 1B.1 species.

4.2.4.1. SURVEY RESULTS

Botanical surveys conducted in 2010 during the appropriate blooming period for this species were negative. Therefore, the species is considered absent from the BSA.

4.2.4.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because this species is considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.4.3. PROJECT IMPACTS

Because this species is considered absent from the BSA, the I-5 HOV Lane Extension Project is not expected to impact this species.

4.2.4.4. COMPENSATORY MITIGATION

Because this species is considered absent from the BSA, no compensatory mitigation is required.

4.2.4.5. CUMULATIVE IMPACTS

Because this species is considered absent from the BSA, it is unlikely that the I-5 HOV Lane Extension Project will contribute to cumulative impacts to this species.

4.2.5. Discussion of Brand's Star Phacelia

Brand's star phacelia is an annual herb that occurs in coastal dunes and coastal scrub from 3 to 1,200 ft in elevation. This species is a candidate for federal listing and is a CNPS List 1B.1 species.

4.2.5.1. SURVEY RESULTS

Botanical surveys conducted in 2010 during the appropriate blooming period for this species were negative. Therefore, the species is considered absent from the BSA.

4.2.5.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because this species is considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.5.3. PROJECT IMPACTS

Because this species is considered absent from the BSA, the I-5 HOV Lane Extension Project is not expected to impact this species.

4.2.5.4. COMPENSATORY MITIGATION

Because this species is considered absent from the BSA, no compensatory mitigation is required.

4.2.5.5. CUMULATIVE IMPACTS

Because this species is considered absent from the BSA, it is unlikely that the I-5 HOV Lane Extension Project will contribute to cumulative impacts to this species.

4.2.6. Discussion of Big-Leaved Crownbeard

Big-leaved crownbeard is a perennial herb that occurs in southern maritime chaparral and coastal scrub from 135 to 615 ft in elevation. This species is federally and State listed as threatened and is a CNPS List 1B.1 species.

4.2.6.1. SURVEY RESULTS

Botanical surveys conducted in 2010 during the appropriate blooming period for this species were negative. Therefore, the species is considered absent from the BSA.

4.2.6.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because this species is considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.6.3. PROJECT IMPACTS

Because this species is considered absent from the BSA, the I-5 HOV Lane Extension Project is not expected to impact this species.

4.2.6.4. COMPENSATORY MITIGATION

Because this species is considered absent from the BSA, no compensatory mitigation is required.

4.2.6.5. CUMULATIVE IMPACTS

Because this species is considered absent from the BSA, it is unlikely that the I-5 HOV Lane Extension Project will contribute to cumulative impacts to this species.

4.2.7. Discussion of Other Special-Status Coastal Sage Scrub Plant Species

Other special-status species with the potential to occur in CSS habitat in the BSA are Coulter's saltbush, south coast saltscale, intermediate mariposa lily, long-spined spineflower, Blochman's dudleya, many-stemmed dudleya, sticky dudleya, Pendleton button-celery, cliff spurge, Palmer's grapplinghook, vernal barley, California satintail, Nuttall's lotus, Santa Catalina Island desert-thorn, prostrate vernal pool navarretia, peninsular nolina, Allen's pentachaeta, white rabbit-tobacco, Nuttall's scrub oak, San Miguel savory, chaparral ragwort, salt spring checkerbloom, and Parry's tetracoccus.

4.2.7.1. SURVEY RESULTS

Botanical surveys conducted in 2010 during the appropriate blooming period for these species were negative. Therefore, they are considered absent from the BSA.

4.2.7.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because these species are considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.7.3. PROJECT IMPACTS

Because these species are considered absent from the BSA, the I-5 HOV Lane Extension Project is not expected to impact them.

4.2.7.4. COMPENSATORY MITIGATION

Because these species are considered absent from the BSA, no compensatory mitigation is required.

4.2.7.5. CUMULATIVE IMPACTS

Because these species are considered absent from the BSA, it is unlikely that the I-5 HOV Lane Extension Project will contribute to cumulative impacts to them.

4.2.8. Special-Status Riparian/Riverine Plant Species

Other special-status species with the potential to occur in riparian/riverine habitats in the BSA are Orcutt's brodiaea, southern tarplant, smooth tarplant, long-spined spineflower, Pendleton button-celery, vernal barley, California satintail, Coulter's goldfields, little mousetail, prostrate vernal pool navarretia, white rabbit-tobacco, San Miguel savory, and salt spring checkerbloom.

4.2.8.1. SURVEY RESULTS

Botanical surveys conducted in 2010 during the appropriate blooming period for these species were negative. Therefore, they are considered absent from the BSA.

4.2.8.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because these species are considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.8.3. PROJECT IMPACTS

Because these species are considered absent from the BSA, the I-5 HOV Lane Extension Project is not expected to impact them.

4.2.8.4. COMPENSATORY MITIGATION

Because these species are considered absent from the BSA, no compensatory mitigation is required.

4.2.8.5. CUMULATIVE IMPACTS

Because these species are considered absent from the BSA, it is unlikely that the I-5 HOV Lane Extension Project will contribute to cumulative impacts to them.

4.2.9. Special-Status Grassland and Disturbed Area Plant Species

Other special-status plant species with the potential to occur in grassland habitats and disturbed areas in the BSA are Coulter's saltbush, south coast saltscale, Orcutt's brodiaea, intermediate mariposa lily, southern tarplant, smooth tarplant, long-spined spineflower, Blochman's dudleya, many-stemmed dudleya, Pendleton button-celery, Palmer's grapplinghook, vernal barley, California satintail, Coulter's goldfields, little mousetail, prostrate vernal pool navarretia, Allen's pentachaeta, and San Miguel savory.

4.2.9.1. SURVEY RESULTS

Botanical surveys conducted in 2010 during the appropriate blooming period for these species were negative. Therefore, they are considered absent from the BSA.

4.2.9.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because these species are considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.9.3. PROJECT IMPACTS

Because these species are considered absent from the BSA, the I-5 HOV Lane Extension Project is not expected to impact them.

4.2.9.4. COMPENSATORY MITIGATION

Because these species are considered absent from the BSA, no compensatory mitigation is required.

4.2.9.5. CUMULATIVE IMPACTS

Because these species are considered absent from the BSA, it is unlikely that the I-5 HOV Lane Extension Project will contribute to cumulative impacts to them.

4.3. Special-Status Animal Species Occurrences

A total of 19 of the 73 special-status animal species with the potential to occur in the vicinity of the BSA are federally and/or State-listed endangered or threatened, or proposed endangered or threatened, or are considered a fully protected species by the State of California: San Diego fairy shrimp, Riverside fairy shrimp, tidewater goby, southern steelhead, arroyo toad, golden eagle, western snowy plover, white-tailed kite, southwestern willow flycatcher (SWWF), American peregrine falcon, Belding's savannah sparrow, California brown pelican, CAGN, light-footed clapper rail, bank swallow, California least tern, least Bell's vireo (LBV), ringtail, Stephens' kangaroo rat, and Pacific pocket mouse. As noted in Chapter 3, suitable habitat for the following 14 of these species is not present in the BSA: Riverside fairy shrimp, tidewater goby, golden eagle, western snowy plover, SWWF, American peregrine falcon, Belding's savannah sparrow, California brown pelican, light-footed clapper rail, bank swallow, California least tern, ringtail, Stephens' kangaroo rat, and Pacific pocket mouse. These species are therefore not discussed further in this analysis.

The results of surveys, critical habitat discussion, minimization/mitigation measures, project impacts, and cumulative impacts for the remaining listed wildlife species are

discussed in this section. In addition, other special-status wildlife species with the potential to occur in the BSA are discussed in this section. There are no established wildlife movement corridors within the BSA.

4.3.1. Discussion of San Diego Fairy Shrimp

The San Diego fairy shrimp was listed as endangered by the USFWS in February 1997. On December 1, 2007, the USFWS designated 3,082 ac in Orange and San Diego Counties as revised final critical habitat (72 Federal Register [FR] 70647). This revised final rule excludes lands within approved Habitat Conservation Plan (HCP) areas. The proposed project is not within or near any designated critical habitat for the San Diego fairy shrimp.

The San Diego fairy shrimp is a small aquatic crustacean that is generally restricted to vernal pools and other ephemeral basins in coastal Orange and San Diego Counties and northwestern Baja California, Mexico. Vernal pools in southern California typically contain water in the winter and are dry in the summer. The San Diego fairy shrimp is a habitat specialist found in shallower pools that range in depth from 2 to 12 inches (in). Males are distinguishable from other male shrimp species by differences in the distal (located far from the point of attachment) tip of the second antennae. Females are distinguishable from other female shrimp species by the shape and length of the brood sac, the length of the ovary, and the presence of paired dorsolateral (located on the sides, toward the back) spines on five of the abdominal segments.

4.3.1.1. SURVEY RESULTS

A fairy shrimp habitat suitability assessment was conducted by LSA Associates, Inc. (LSA) biologist Stan Spencer on December 14 and 15, 2009, to assess conditions for fairy shrimp in the BSA. That assessment is provided in Appendix G and is summarized in this section. A follow-up visit was conducted by Dr. Spencer on January 28, 2010. The assessment determined that there is one area north of Camino Capistrano that may be suitable for fairy shrimp, as shown on Figure 2 in Appendix G. However, this potentially suitable area is outside the impact area for the I-5 Lane Extension Build Alternatives. In addition, the probability of San Diego fairy shrimp occurring in the BSA is low.

4.3.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because the I-5 HOV Lane Extension Project is not expected to impact this species, no avoidance and minimization efforts are required.

4.3.1.3. PROJECT IMPACTS

There is one potential area north of Camino Capistrano that could potentially be occupied by San Diego fairy shrimp. While it is not vernal pool habitat, it retains water for a sufficient amount of time for fairy shrimp to utilize it. However, no construction by the I-5 HOV Lane Extension Project is planned near this area. Therefore, no direct or indirect impacts to San Diego fairy shrimp are expected to occur as a result of the I-5 HOV Lane Extension Project. However, if the project design changes and construction is anticipated in that area, protocol fairy shrimp surveys will be conducted.

4.3.1.4. COMPENSATORY MITIGATION

Because the I-5 HOV Lane Extension Project is not expected to impact this species, no compensatory mitigation is warranted. However, if the project design changes and construction is anticipated in the project area, protocol fairy shrimp surveys will be conducted. If San Diego fairy shrimp is found during those surveys, compensatory mitigation will be required.

4.3.1.5. CUMULATIVE IMPACTS

Because the I-5 HOV Lane Extension Project is not expected to impact this species or any vernal pool habitat, the project is not expected to contribute to cumulative adverse impacts to San Diego fairy shrimp.

4.3.2. Discussion of Southern Steelhead

Steelhead are a unique form of rainbow trout. Resident forms are usually referred to as “rainbow” or “redband” trout, while anadromous (meaning that they migrate as juveniles from fresh water to the ocean and then return to spawn in fresh water) forms are termed “steelhead.” When in fresh water, this species occurs in stream habitats containing runs, low-gradient riffles, mid-channel pools, and lateral scour pools associated with bedrock. The southern steelhead occurred in lower San Juan Creek historically but has apparently not been recorded there in decades.

In August 1997, the southern steelhead was listed as endangered by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). No critical habitat for the southern steelhead has been designated in Orange County.

4.3.2.1. SURVEY RESULTS

Southern steelhead was not observed in the BSA during the surveys conducted in 2009. Although surveys were not directed toward this species, there is a low probability of southern steelhead occurring within San Juan Creek in or immediately downstream of the

BSA because the habitat within the BSA is marginal and this species is believed to be extirpated from San Juan Creek. On September 2, 2005, the NMFS changed the status of San Juan Creek to unoccupied by steelhead and removed all 19.7 miles (mi) of San Juan Creek from the species' critical habitat (FR 2005). Therefore, southern steelhead is considered absent from the BSA.

4.3.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because southern steelhead is considered absent from the BSA and there is no designated critical habitat for the species in or downstream of the BSA, no avoidance and minimization efforts are warranted. However, because this species occurred in San Juan Creek historically, avoidance and minimization efforts described for the riparian/riverine natural community would benefit southern steelhead indirectly should it reestablish in San Juan Creek.

4.3.2.3. PROJECT IMPACTS

Because southern steelhead is considered absent from the BSA and there is no designated critical habitat for the species in or downstream of the BSA, the I-5 HOV Lane Extension Project is not expected to impact southern steelhead.

4.3.2.4. COMPENSATORY MITIGATION

Because southern steelhead is considered absent from the BSA and there is no designated critical habitat for the species in or downstream of the BSA, no compensatory mitigation is warranted.

4.3.2.5. CUMULATIVE IMPACTS

Although southern steelhead is not believed to occupy San Juan Creek at this time, the creek provides potential habitat for the species to occupy in the future. Because southern steelhead occupy riparian/riverine habitat, cumulative effects to the southern steelhead are the same as those described for the riparian/riverine habitat natural community above through the loss of potential future habitat.

4.3.3. Discussion of Arroyo Toad

Arroyo toads are primarily nocturnal and are identified by their olive green to light brown coloration, white belly, and white v-shaped stripe between the eyes. Arroyo toads are also set apart from other toads since their eggs are laid at calling sites of males. The arroyo toad's life begins in the water, where it hatches and develops into a tadpole. Once it reaches the adult stage, it primarily dwells on land. This species subsists on insects and digs burrows on sandy terraces or occupies abandoned rodent burrows.

In December 1994, the arroyo toad was listed as endangered by the USFWS. It was also listed as a Species of Special Concern by CDFG in 1994. On April 13, 2005, the USFWS designated 11,695 ac of critical habitat for the toad in parts of Santa Barbara, Ventura, Los Angeles, San Bernardino, and Riverside Counties. No critical habitat for the toad has been designated in Orange County.

4.3.3.1. SURVEY RESULTS

An arroyo toad habitat suitability assessment was conducted by LSA biologist Ingri Quon on September 22, 2009, to assess conditions for arroyo toad in San Juan Creek at I-5. That assessment is provided in Appendix F and is summarized in this section. The conditions within the channelized creek appeared suitable for arroyo toad breeding and foraging. The creek bed had a narrow channel of slow-moving, shallow water with a sandy substrate over concrete. The channel bottom in this area is over 100 ft wide. Upland habitat quality in and immediately adjacent to the BSA is low to marginal, but upstream there is marginally suitable upland habitat with channel vegetation of mature willow riparian forest and willow riparian scrub.

4.3.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

Although the I-5 HOV Lane Extension Project is not expected to have any direct permanent or temporary impacts to arroyo toad, the following measure will be incorporated to avoid and minimize indirect impacts to arroyo toad in addition to those described for the riparian/riverine natural community:

- Shielded lighting will be used for any nighttime construction adjacent to San Juan Creek to avoid and minimize artificial night-lighting effects.

4.3.3.3. PROJECT IMPACTS

The I-5 HOV Lane Extension Project is not expected to require any construction in or immediately adjacent to San Juan Creek. Therefore, the Build Alternatives are not expected to have any direct permanent or temporary impacts to arroyo toad. However, if the project design changes and construction is anticipated in that area, protocol arroyo toad surveys will be conducted in the area.

Potential indirect temporary impacts from construction include the increased exposure of arroyo toad to nighttime lighting, noise, vibration, dust, and human presence. Without minimization measures, nighttime lighting, noise, vibration, and dust generated from construction equipment could potentially adversely affect arroyo toad in the immediate vicinity of construction activities. Implementation of the proposed minimization

measures, general construction BMPs, and Caltrans standard specifications would substantially reduce those potential indirect adverse impacts on the toad.

4.3.3.4. COMPENSATORY MITIGATION

Because the I-5 HOV Lane Extension Project is not expected to directly impact arroyo toads, compensatory mitigation is not warranted.

4.3.3.5. CUMULATIVE IMPACTS

Because this species occupies the riparian/riverine habitat, cumulative effects to arroyo toad are the same as those described for the riparian/riverine natural community above through the loss of potential future habitat.

4.3.4. Discussion of White-Tailed Kite

The white-tailed kite is a fully protected species by the State of California. The white-tailed kite is a medium-sized hawk with long, narrow, pointed wings; a gray back and wings; and a white face and underside. Kites prefer open grasslands and savannahs, where they hover while hunting small mammals. White-tailed kites nest in trees, typically near marshes.

4.3.4.1. SURVEY RESULTS

Although there is no native grassland habitat in the BSA, the ruderal vegetation in the BSA is suitable for foraging, and the riparian/riverine community may be suitable for nesting white-tailed kites. No white-tailed kites were observed in the BSA during the surveys conducted in 2009 and 2010.

4.3.4.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because white-tailed kites occur in riparian/riverine habitats, avoidance and minimization efforts described for the riparian/riverine natural community will also benefit them.

4.3.4.3. PROJECT IMPACTS

The I-5 HOV Lane Extension Project is not expected to directly impact any white-tailed kites as a result of the avoidance and minimization measures described for the riparian/riverine natural community. However, the Build Alternatives are expected to have indirect and temporary impacts to this species through the loss of potential habitat. Therefore, project impacts for this species are the same as those described for the riparian/riverine natural community.

4.3.4.4. COMPENSATORY MITIGATION

Because this species occurs within riparian/riverine habitats, compensatory mitigation described for the riparian/riverine natural community will also benefit white-tailed kites.

4.3.4.5. CUMULATIVE IMPACTS

Because white-tailed kites occupy riparian/riverine habitat, cumulative effects to white-tailed kites are the same as those described for the riparian/riverine habitat natural community above through the loss of potential habitat.

4.3.5. Discussion of Coastal California Gnatcatcher

The CAGN was listed as threatened by the USFWS in March 1993. On February 7, 2000, approximately 513,650 ac in Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties was designated as critical habitat for the CAGN (65 FR 63680). New boundaries for designated critical habitat encompassing a total of 495,795 ac were proposed in April 2003 (68 FR 20228). On December 19, 2007, the USFWS designated 197,303 ac as revised final critical habitat (72 FR 72010). This revised final rule excludes lands in approved HCP areas. Appendix J, Biological Resources, shows the location of CAGN-designated critical habitat in and near the BSA.

The CAGN is a nonmigratory songbird that typically nests and forages in moderately dense stands of CSS below 2,500 ft in elevation in southern California. CAGN usually defend breeding territories ranging in size from 2 to 14 ac and occupy home ranges that vary in size from 13 to 39 ac. The breeding season of the CAGN generally extends from February 15 through August 30. After the chicks have fledged, juveniles remain closely associated with their parents for up to several months and may disperse up to 9 mi from their natal territory.

4.3.5.1. SURVEY RESULTS

Protocol surveys were conducted between October 5, 2009, and January 25, 2010, to determine the presence of CAGN. A copy of the CAGN letter report is provided in Appendix D, Coastal California Gnatcatcher Survey Report. Up to seven pairs of CAGN were found in CSS in the BSA. On November 13, three pairs of CAGN were observed in CSS along the western slope of I-5 near Camino Capistrano and Doheny Park Road. On the same day, a fourth pair was detected across the freeway approximately 350 ft south of the Stonehill Drive on-ramp to NB I-5. On January 25, up to three more pairs were observed in the high-quality CSS along the southwest side of I-5 between Camino de Estrella and the Shorecliff Golf Club at Avenida Vaquero.

4.3.5.2. AVOIDANCE AND MINIMIZATION EFFORTS

The BSA includes CAGN-designated critical habitat. However, efforts were made to minimize impacts to critical habitat areas by limiting project impacts where primary constituent elements of critical habitats occur. Primary constituent elements are those physical or biological habitat features that are essential to the species. These include food sources and sites for breeding, reproduction, shelter, etc.

In addition to the avoidance and minimization measures described for the CSS natural community, the following measure will be incorporated to avoid and minimize effects to CAGN and CAGN-designated critical habitat:

- Shielded lighting will be used for any nighttime construction adjacent to CSS habitat to avoid and minimize artificial night-lighting effects.

4.3.5.3. PROJECT IMPACTS

No direct permanent impacts to CAGN, CAGN-designated critical habitat, or CAGN-occupied habitat are expected to occur as a result of project implementation. The figures in Appendix K, Project Impacts to Biological Resources, illustrate where CSS, occupied CSS, and CAGN critical habitat are located compared to the maximum extent of disturbance from all the Build Alternatives and their design options.

Temporary impacts to 0.018 ac of CAGN-designated critical habitat are expected to occur as a result temporary construction easements during project implementation. However, no CAGN were observed during focused surveys in or adjacent to this area; thus, project implementation is expected to receive a “no effect” or “may affect but is not likely to adversely affect” finding from the USFWS to CAGN and its designated critical habitat. Other than this area, no other direct temporary impacts to CAGN or CAGN-occupied habitat are expected to occur as a result of project implementation.

Potential indirect temporary effects from construction include the increased exposure of CAGN to nighttime lighting, noise, vibration, dust, and human presence. Without minimization measures, nighttime lighting, noise, vibration, and dust generated from construction equipment could potentially adversely affect CAGN in the immediate vicinity of construction activities. However, implementation of the proposed minimization measures, general construction BMPs, and Caltrans standard specifications would substantially reduce those potential indirect adverse effects to CAGN.

4.3.5.4. COMPENSATORY MITIGATION

Informal Section 7 consultation with the USFWS will be required to address effects to CAGN-designated critical habitat areas. However, federal Section 7 consultation between Caltrans and USFWS may be necessary for the I-5 HOV Lane Extension Project. The USFWS will make the decision for federal Section 7 consultation during informal consultation. The proposed minimum mitigation ratios of 3:1 for permanent effects and 1:1 for temporary effects to occupied CSS and/or CAGN-designated critical habitat are consistent with USFWS standards. Compensatory mitigation would require on-site restoration within the State right-of-way or off-site acquisition of conservation lands and restoration efforts to enhance or create CSS. Options for compensatory mitigation will be evaluated through coordination among the OCTA, Caltrans, and the resource agencies.

On February 3, 1999, President Clinton signed EO 13112, requiring federal agencies to combat the introduction or spread of invasive species in the United States. Therefore, in compliance with EO 13112, weed control will be implemented, and temporarily impacted areas will be revegetated with plant species that help prevent the introduction or spread of invasive species. This weed control will benefit CSS habitat and CAGN. Details regarding weed control are provided in Section 5.4, Invasive Species.

4.3.5.5. CUMULATIVE IMPACTS

Because CAGN occupy CSS habitat, cumulative effects to CAGN are the same as those described earlier for the CSS natural community.

4.3.6. Discussion of Least Bell's Vireo

LBV was listed as an endangered species by State and federal agencies in 1980 and 1986, respectively, and critical habitat was designated in 1994 (USFWS 1986, 1994). LBV is a small migratory songbird that nests in southern California. This species is a summer resident of southern California and breeds in willow thickets and other dense, low riparian growths in lowlands and lower portions of canyons. Approximately 38,000 ac of critical habitat was designated for LBV in 1994. The critical habitat occurs in 10 areas throughout Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego Counties. Approximately 49 percent of the LBV population in the United States occurred in these 10 critical habitat areas in 1994: the Santa Ynez River, Santa Clara River, Santa Ana River, Santa Margarita River, San Luis Rey River, Sweetwater River, San Diego River, Tijuana River, Coyote Creek, and Jamul-Dulzura Creeks.

4.3.6.1. SURVEY RESULTS

Focused surveys were conducted by LSA in 2010 to determine the presence of LBV in the BSA (Appendix C). LBV were found at three locations during the surveys. Within the BSA, an unmated male was observed in the low-lying area between the freeway and the San Juan Capistrano School District offices north of the Stonehill Drive interchange. The dates that that bird was observed (May 24, June 7, and June 16) suggest that it may have been the same bird that was present earlier (May 4 and May 13) on the northeast side of the school district offices. The third location occupied by LBV was in more typical willow riparian habitat along San Juan Creek just upstream from the I-5 crossing where successful nesting was confirmed on May 24. There is no LBV-designated critical habitat within or immediately adjacent to the BSA.

4.3.6.2. AVOIDANCE AND MINIMIZATION EFFORTS

The following measures will be incorporated to avoid and minimize effects to LBV:

- Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around riparian/riverine vegetation adjacent to the project footprint to designate ESAs to be preserved. No grading or fill activity of any type will be permitted within these ESAs. In addition, no construction activities, materials, or equipment will be allowed within the ESAs. All construction equipment will be operated in a manner so as to prevent accidental damage to nearby preserved areas. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.
- To avoid effects to nesting birds, any native vegetation removal or tree (native or exotic) trimming activities will occur outside of the nesting bird season (i.e., February 15–August 31). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist will conduct a preconstruction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer should be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.
- A biologist will monitor all construction activities for the duration of the project in areas adjacent to ESA boundaries to flush any wildlife species present prior to construction and to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly adhered to.

- Shielded lighting will be used for any nighttime construction adjacent to vegetated drainages to avoid and minimize artificial night-lighting effects.

4.3.6.3. PROJECT IMPACTS

Although direct impacts to LBV are not expected to occur as a result of project implementation, project impacts to riparian/riverine habitat that may potentially be used by LBV for foraging would occur under the Build Alternatives. The figures in Appendix K illustrate where riparian/riverine habitat is located compared to the maximum extent of impacts from all the Build Alternatives and design options.

Potential indirect temporary impacts from construction include the increased exposure of LBV to nighttime lighting, noise, vibration, dust, and human presence. Without minimization measures, nighttime lighting, noise, vibration, and dust generated from construction equipment could potentially adversely affect LBV in the immediate vicinity of construction activities; however, implementation of the proposed minimization measures, general construction BMPs, and Caltrans standard specifications would substantially reduce potential indirect adverse impacts.

4.3.6.4. COMPENSATORY MITIGATION

Because no direct take of LBV or LBV-designated critical habitat is expected from the I-5 HOV Lane Extension Project, no compensatory mitigation is required.

4.3.6.5. CUMULATIVE IMPACTS

Because LBV occupy riparian/riverine habitat, the potential cumulative effects to LBV are the same as those described earlier for the riparian/riverine natural community above.

4.3.7. Discussion of Special-Status Coastal Sage Scrub Animal Species

In addition to the species discussed above, special-status CSS species with the potential to occur in the BSA are silvery legless lizard, orange-throated whiptail, coastal western whiptail, northern red-diamond rattlesnake, San Diego horned lizard, southern California rufous-crowned sparrow, burrowing owl, Costa's hummingbird, Lawrence's goldfinch, lark sparrow, merlin, loggerhead shrike, and San Diego desert woodrat.

4.3.7.1. SURVEY RESULTS

None of these species were observed in the BSA during the surveys conducted in 2009. Although most of these species were not observed during those surveys, the surveys were not directed toward these species. In addition, it is possible for them to move onto the site prior to construction. While almost all of the habitat on site is disturbed, or degraded by

infestations of nonnative species or developed, some good quality CSS habitat exists in the BSA for these species as described in the CSS natural community.

4.3.7.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because these species occupy the CSS natural community, avoidance and minimization efforts for special-status CSS animal species would be the same as those described for the CSS natural community.

4.3.7.3. PROJECT IMPACTS

Suitable CSS habitat is present within the BSA. However, the I-5 HOV Lane Extension Project is not expected to directly impact any of these species as a result of the avoidance and minimization measures described for the CSS natural community. However, the Build Alternatives are expected to indirectly impact them through the loss of potential habitat. Therefore, project impacts for these species are the same as those described for the CSS natural community.

4.3.7.4. COMPENSATORY MITIGATION

The Build Alternatives are not expected to directly impact these species. In addition, these species are afforded no legal or regulatory protection. Therefore, specific compensatory mitigation is not required. However, because these species occupy CSS habitat, compensatory mitigation described for the CSS natural community will also benefit these species.

4.3.7.5. CUMULATIVE IMPACTS

Incremental cumulative impacts to these species will result through the loss and degradation of available habitat. Because of this, the potential cumulative impacts to these species are the same as those described for the CSS natural community.

4.3.8. Discussion of Special-Status Riparian and Riverine Animal Species

In addition to the species discussed above, many special-status animal species occur in riparian and riverine habitats, including monarch butterfly, partially armored threespine stickleback, arroyo chub, southwestern pond turtle, silvery legless lizard, coastal western whiptail, San Bernardino ring-necked snake, San Diego horned lizard, two-striped garter snake, Cooper's hawk, tricolored blackbird, great blue heron, Lawrence's goldfinch, California yellow warbler, merlin, saltmarsh common yellowthroat, yellow-breasted chat, loggerhead shrike, black-crowned night-heron, Nuttall's woodpecker, Allen's

hummingbird, western mastiff bat, western red bat, hoary bat, western yellow bat, pocketed free-tailed bat, and big free-tailed bat.

4.3.8.1. SURVEY RESULTS

None of these species were observed in the BSA during the surveys conducted in 2009 or 2010. Although these special-status species were not observed during those surveys, the surveys were not focused on these species. In addition, it is possible for them to move onto the site prior to construction. While almost all the habitat on site is developed or degraded by infestations of nonnative species or disturbed, some riparian/riverine habitat exists in the BSA for these species as described in the riparian/riverine natural community. While the riparian/riverine habitat within the BSA is of poor quality, it is still suitable for species with broader habitat requirements.

4.3.8.2. AVOIDANCE AND MINIMIZATION EFFORTS

Because these species occupy the riparian/riverine natural community, avoidance and minimization efforts for special-status riparian/riverine animal species would be the same as those described for the riparian/riverine natural community.

4.3.8.3. PROJECT IMPACTS

Suitable riparian/riverine habitat is present within the BSA. However, the Build Alternatives are not expected to directly impact any of these species as a result of the avoidance and minimization measures described for the riparian/riverine natural community. Furthermore, the Build Alternatives are expected to have indirect and temporary impacts to them through the loss of potential habitat. Therefore, project impacts for these species are the same as those described for the riparian/riverine natural community.

4.3.8.4. COMPENSATORY MITIGATION

The Build Alternatives are not expected to directly impact these species. In addition, these species are afforded no legal or regulatory protection. Therefore, specific compensatory mitigation is not required. However, because these species occupy riparian/riverine habitats, if compensatory mitigation becomes necessary for the riparian/riverine natural community, it will also benefit these species.

4.3.8.5. CUMULATIVE IMPACTS

Incremental cumulative impacts to these species will result through the loss and degradation of available habitat. Because of this, the potential cumulative impacts to these species are the same as those described for the riparian/riverine natural community.

4.3.9. Discussion of Special-Status Grassland and Open Habitat Animal Species

In addition to the species discussed above, many special-status animal species occur in grassland and open habitats, including the western spadefoot, silvery legless lizard, coastal western whiptail, northern red-diamond rattlesnake, San Diego horned lizard, burrowing owl, merlin, and loggerhead shrike.

4.3.9.1. SURVEY RESULTS

None of these species were observed in the BSA during the surveys conducted in 2009. Although these special-status species were not observed during these surveys, the surveys were not focused on these species. In addition, it is possible for them to move onto the site prior to construction. While much of the habitat on site is disturbed, developed, or degraded by infestations of nonnative species, some suitable habitat exists in the BSA for these species.

4.3.9.2. AVOIDANCE AND MINIMIZATION EFFORTS

The following measure will be incorporated to avoid and minimize impacts to special-status grassland and open habitat animal species:

- In order to avoid impacts to nesting birds, any native or exotic vegetation removal, tree trimming activities, or bridge demolition will occur outside of the nesting season (February 15–August 31). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist will conduct a preconstruction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or clearing will not be conducted in this zone until the biologist determines that the young have fledged or the nest is no longer active.

4.3.9.3. PROJECT IMPACTS

The Build Alternatives are not expected to directly impact any of these species as a result of the avoidance and minimization measure described above. The I-5 HOV Lane Extension Project is expected to have indirect and temporary impacts to them through the loss of potential habitat.

However, on February 3, 1999, President Clinton signed EO 13112, requiring federal agencies to combat the introduction or spread of invasive species in the United States. Therefore, in compliance with EO 13112, weed control will be implemented, and temporarily impacted areas will be revegetated with plant species that help prevent the

introduction or spread of invasive species. This weed control will benefit grassland and open habitat species as well. Details regarding weed control are described in Section 5.4, Invasive Species. Because of this, in conjunction with the avoidance and minimization measure described above, the I-5 HOV Lane Extension Project is not expected to impact these species.

4.3.9.4. COMPENSATORY MITIGATION

Due to the avoidance and minimization measure described, the Build Alternatives are not expected to directly impact these species; therefore, specific compensatory mitigation is not required.

4.3.9.5. CUMULATIVE IMPACTS

Although the grassland and open areas in the BSA consist predominantly of nonnative vegetation, subsequent development would replace this vegetation with impervious areas. Therefore, the cumulative impacts of the Build Alternatives, in combination with reasonably foreseeable development in the vicinity, may incrementally contribute to cumulative adverse impacts to these species through the loss of potential habitat.

4.3.10. Discussion of Special-Status Bridge- and Crevice-Dwelling Animal Species

Special-status bridge- and crevice-dwelling animal species (i.e., bats) with the potential to occur in the BSA include pallid bat, Mexican long-tongued bat, Townsend's big-eared bat, western mastiff bat, western small-footed myotis, Yuma myotis, pocketed free-tailed bat, and big free-tailed bat.

4.3.10.1. SURVEY RESULTS

A bat habitat suitability assessment was conducted by LSA biologist Jill Carpenter on December 8 and 9, 2009, to ascertain the potential for bat foraging and roosting activity in the BSA. The bat assessment is provided in Appendix E, Bat Habitat Suitability Assessment Memorandum. The findings of that assessment are summarized in this section.

Although none of these species were observed in the BSA during the survey conducted in 2009, the survey did not include sampling, exit counts, or acoustical monitoring to assist with identifying specific species of bats. In addition, there is a high probability that Yuma myotis will be present in the BSA during the summer months. Suitable roosting and foraging habitat exists in the BSA for all of the special-status bat species. Therefore, additional surveys will be conducted by a qualified bat biologist in June prior to

construction to assess the potential for the BSA's use for maternity roosting, since maternity roosts are generally formed in late spring. The surveys will include a combination of structure inspection, sampling, exit counts, and acoustic surveys.

4.3.10.2. AVOIDANCE AND MINIMIZATION EFFORTS

The following measures will be incorporated to avoid and minimize impacts to the bridge- and crevice-dwelling animal species:

- A qualified bat biologist will survey the project disturbance limits in June, prior to construction, to assess the potential for the BSA's use for maternity roosting, since maternity roosts are generally formed in late spring. The qualified bat biologist will also perform preconstruction surveys because bat roosts can change seasonally. The surveys will include a combination of structure inspection, sampling, exit counts, and acoustic surveys.
- To avoid direct mortality to bats roosting in areas subject to impacts from construction activities, any structure with potential bat habitat will have temporary bat exclusion devices installed under the supervision of a qualified bat biologist prior to the initiation of construction activities. Exclusion will be conducted during the fall (September or October) to avoid trapping flightless young inside during the summer months or hibernating individuals during the winter. Such exclusion efforts must be continued to keep the structures free of bats until the completion of construction. All bat exclusion techniques will be coordinated between the Caltrans District Biologist and the resource agencies.
- All work conducted on bridges will take place during the day to the extent feasible. If this is not feasible, impacts will be minimized by directing lighting and noise away from night roosting areas as much as possible.
- Riparian vegetation adjacent to bat roosting sites will be kept intact to the extent feasible.

4.3.10.3. PROJECT IMPACTS

Only a small part of roosting habitat (existing and future) may be permanently altered by the Build Alternatives if the existing expansion joint crevices are filled in (i.e., rubberized). As a result, the project is not expected to substantially impact the long-term use of the structures by bats. If the expansion joint crevices that provide roosting habitat for bats are retained following construction, the Build Alternatives are not expected to directly impact the bats' long-term use of roosting habitat.

In some cases, the widening and modification of bridge, culvert, and overhead structures may increase available future potential roosting habitat. For example, leaving newly created expansion joint crevices unfilled so that they are available to bats for day roosting could benefit bat species after construction is complete.

Construction could temporarily impede access to roost sites (existing and future) in the crevices of bridges, culverts, and overhead structures. In addition, construction could temporarily impede access to day and night roosting sites. Consequently, bats would have to expend more energy and have less time to forage when roosting sites are impacted, even temporarily, which could have a substantial impact to special-interest bat species.

Project impacts to bridge- and crevice-dwelling animal species would include temporary indirect disturbance (such as noise, vibration, dust, night lighting, and human encroachment) from construction. Furthermore, other permanent indirect issues associated with human encroachment, such as the introduction of nonnative species and trash, would permanently contribute to the degradation of foraging habitat (i.e., riparian/riverine vegetation) in the vicinity.

4.3.10.4. COMPENSATORY MITIGATION

Due to the measures described above, the Build Alternatives are not expected to impact bats' long-term use of structures in the BSA. Therefore, temporary replacement roosting habitat will be provided to minimize impacts to excluded bats if deemed necessary by a qualified bat biologist during subsequent surveys.

4.3.10.5. CUMULATIVE IMPACTS

Because of the avoidance, minimization, and compensatory mitigation measures described above, the widening and modification of bridge, culvert, and overhead structures will more likely increase future potential roosting habitat. Because of this, the project is expected to incrementally benefit bridge- and crevice-dwelling animal species.

4.4. Jurisdictional Waters, Regulatory Permitting, and Compensatory Mitigation

Riparian/riverine habitats such as those found in the BSA were formerly abundant along the major rivers of coastal Southern California but have been substantially reduced by urban expansion, flood control, and channel improvements (Holland 1986). The typical association of these riparian habitat types with drainages means that they are protected under the California Fish and Game Code and, to a certain extent, by the CWA. These habitats are considered high-quality wildlife habitats because they provide protective

cover, water, and food for a variety of wildlife species. Many animal species are riparian habitat obligates. Other animals, including large mammals, require access to water and use bands of riparian habitat as wildlife corridors. As such, CDFG regulates riparian areas to the extent that those areas are associated with the banks of a stream or lake shorelines.

4.4.1. Jurisdictional Findings

As described in Appendix H, Jurisdictional Delineation Report, some riparian/riverine habitats in the BSA are not protected by any federal, State, or local regulations, while others are subject to Sections 404 and/or 401 of the CWA or to Section 1600 of the California Fish and Game Code.

Within the BSA, there is approximately 0.5 ac of wetland and 0.5 ac of nonwetland waters potentially subject to jurisdiction by the Corps under Section 404 of the CWA. There is an additional 0.6 ac of nonwetland waters believed not to be subject to jurisdiction by the Corps because the Corps typically does not assert jurisdiction over nontidal drainage ditches that are excavated on dry land, drain adjacent upland areas, and do not convey a relatively permanent flow.

In addition, there is approximately 1.4 ac in the BSA potentially subject to jurisdiction by the CDFG under Section 1600 of the California Fish and Game Code. There are additional riparian/riverine areas believed not to be subject to jurisdiction by the CDFG because they are not part of a river, stream, or lake as defined by the CDFG.

The extent of areas subject to jurisdiction represents the professional opinion of the consultant biologists and can only be determined by the Corps (under Section 404 of the CWA), CDFG (under Section 1600 of the Fish and Game Code), and the RWQCB (under Section 401 of the CWA).

In addition, a restoration area (Stonehill Drive Restoration Area) is located in the NB I-5 State right-of-way just south of Stonehill Drive. This restoration was put in place as a requirement of Corps Nationwide Permit No. SPL-2006-1961-SJH, CDFG Streambed Authorization Agreement No. 1600-2006-0405-R5, and RWQCB Cleanup and Abatement Order No. R9-2-6-131.

4.4.2. Impacts

None of the Option A Build Alternatives are expected to result in direct permanent impacts to riparian/riverine habitats subject to jurisdiction of Sections 404 and 401 of the

CWA. However, all of the Option B Build Alternatives are expected to permanently impact 0.01 ac of potentially jurisdictional waters.

In addition, the I-5 HOV Lane Extension Project is expected to result in direct permanent impacts to riparian/riverine habitats believed not to be subject to jurisdiction under Sections 404 and 401 of the CWA. All of the Build Alternatives and Options are expected to impact 0.14 ac of potentially nonjurisdictional waters. Should the Corps assert jurisdiction over these areas, additional Avoidance, Minimization, and Compensatory Mitigation will be addressed through the permitting/authorization processes. Permanent impacts may include complete removal and heavy encroachment that may have substantial detrimental impacts to the long-term viability of the community.

Table 4.3 shows the amount of riparian/riverine habitat potentially subject to (or not subject to) Corps jurisdiction that will be permanently impacted by each Build Alternative.

None of the I-5 HOV Lane Extension Project Build Alternatives for Option A are expected to permanently impact any potential CDFG jurisdictional areas. However, all of the I-5 HOV Lane Extension Project Build Alternatives for Option B are expected to permanently impact 0.02 ac of potential CDFG jurisdictional areas.

Based on information provided by Caltrans biologists, the I-5 HOV Lane Extension Project Build Alternatives are not expected to directly impact the Stonehill Drive Restoration Area. However, should this change during final project design, approval is required by the resource agencies prior to any impacts. This requirement is set forth in Requirement 15 of Section III, Special Provisions under Corps Nationwide Permit No. SPL-2006-1961-SJH. This requirement is separate from any requirements under any future permit and/or authorization.

Table 4.3: Permanent Project Impacts to Potential Corps Jurisdictional and Nonjurisdictional Nonwetland Waters by Build Alternative (acres)

Drainage System	Alternative 2		Alternative 3		Alternative 4	
	Design Option A	Design Option B	Design Option A	Design Option B	Design Option A	Design Option B
Potential Jurisdictional Areas						
Drainage 1	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 12	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 13	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 14	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 17	0.00	0.00	0.00	0.00	0.00	0.00

Drainage 20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 21	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 25	0.00	0.01	0.00	0.01	0.00	0.01
Total Potential Jurisdictional Areas	0.00	0.01	0.00	0.01	0.00	0.01
Potential Nonjurisdictional Areas						
Drainage 2	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 3	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 4	0.01	0.01	0.01	0.01	0.01	0.01
Drainage 5	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 6	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 7	0.04	0.04	0.04	0.04	0.04	0.04
Drainage 8	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 9	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 10	0.02	0.02	0.02	0.02	0.02	0.02
Drainage 11	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 15	0.02	0.02	0.02	0.02	0.02	0.02
Drainage 16	0.01	0.01	0.01	0.01	0.01	0.01
Drainage 18	0.01	0.01	0.01	0.01	0.01	0.01
Drainage 19	0.01	0.01	0.01	0.01	0.01	0.01
Drainage 22	0.01	0.01	0.01	0.01	0.01	0.01
Drainage 23	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 24	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 26	0.00	0.00	0.00	0.00	0.00	0.00
Drainage 27	0.01	0.01	0.01	0.01	0.01	0.01
Total Potential Nonjurisdictional Areas	0.14	0.14	0.14	0.14	0.14	0.14
Total Impacts	0.14	0.15	0.14	0.15	0.14	0.15

The I-5 HOV Lane Extension Project is not expected to result in any temporary impacts to riparian/riverine habitats. Should that change, temporary impacts will be limited to incidental encroachment; otherwise, impacts will be considered permanent.

4.4.3. Regulatory Permits

The following authorizations will be obtained, if required:

- Authorization under Nationwide Permit 14, Linear Transportation Projects, will be pursued pursuant to Section 404 of the CWA, if appropriate.
- A Streambed Alteration Notification (SAN) with the CDFG will be filed and a Streambed Alteration Agreement (SAA) will be obtained, if appropriate.
- A Section 401 Water Quality Certification from the RWQCB will be obtained, if appropriate.

4.4.4. Compensatory Mitigation

None of the Option A Build Alternatives are expected to impact any areas potentially jurisdictional by the Corps (under Section 404 of the CWA), RWQCB (under Section 401

of the CWA), or CDFG (under Section 1600 of the Fish and Game Code). Because of this, no compensatory mitigation requirement from these agencies is expected for the Option A Build Alternatives at this time.

Option B for all Build Alternatives is expected to impact areas potentially jurisdictional by the Corps, RWQCB, or CDFG. Should Option B from any of the Alternatives be selected, compensatory mitigation may be required.

The I-5 HOV Lane Extension Project is expected to result in direct permanent impacts to areas believed not to be subject to jurisdiction under Sections 404 and 401 of the CWA or under Section 1600 of the California Fish and Game Code. Should the agencies assert jurisdiction over an area believed not to be subject to their jurisdiction and the project impacts this area, compensatory mitigation may be required by the resource agencies.

If a project design is chosen or the agencies assert jurisdiction over an area believed not to be subject to their jurisdiction, compensatory mitigation will be required. Typically, impacts to jurisdictional waters subject to Corps and CDFG jurisdiction are mitigated at a minimum mitigation-to-effect ratio of 3:1 for permanent effects and 1:1 for temporary effects, which is consistent with the Corps and CDFG policies for no net loss of wetlands standards. This mitigation may be accomplished through the payment of an in-lieu fee, habitat restoration and/or enhancement of on- or off-site areas, or another mechanism approved by the resource agencies.

Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions

5.1. Federal Endangered Species Act Consultation Summary

Under the provisions of Section 7(a)(2) of the Federal Endangered Species Act (FESA), a federal agency that permits, licenses, funds, or otherwise authorizes a project activity must consult with the United States Fish and Wildlife Service (USFWS) to ensure that its actions would not jeopardize the continued existence of any listed species or destroy or adversely modify critical habitat. This Natural Environment Study (NES) provides details on the proposed project's impacts to federally listed plant and wildlife species. Federal Section 7 consultation between the California Department of Transportation (Caltrans) and the USFWS is not expected to be necessary to attain authorization for potential adverse project effects to coastal California gnatcatcher (CAGN; *Poliophtila californica californica*), CAGN-designated critical habitat, or least Bell's vireo (LBV). However, informal consultation will be conducted to make certain Avoidance and Minimization measures will ensure no adverse effects to CAGN, CAGN-designated critical habitat, and LBV. Formal Section 7 consultation between Caltrans and USFWS may be necessary for the I-5 HOV Lane Extension Project. The USFWS will make the decision for federal Section 7 consultation during informal consultation.

5.2. California Endangered Species Act Consultation Summary

The California Endangered Species Act (CESA) protects plant and animal species listed as rare, threatened, or endangered. The California Department of Fish and Game (CDFG) authorizes take of endangered, threatened, or candidate species through the provisions of Sections 2081 and 2081.1 of the California Fish and Game Code. Authorization from CDFG (under Sections 2081 or 2080.1 of the Fish and Game Code) for take of any endangered, threatened, or candidate species is not expected to be required for the proposed project, but it may be required if State-listed species, such as (but not limited to) LBV, are found in the disturbance limits during subsequent surveys. However, informal consultation is recommended to make certain Avoidance and Minimization measures will ensure no adverse effects to LBV. Subsequent surveys that may be conducted include preconstruction nest surveys or surveys conducted by others unrelated to the I-5 High-Occupancy Vehicle (HOV) Lane Extension Project.

5.3. Wetlands and Other Waters Coordination Summary

The findings and conclusions regarding the locations and extent of wetlands and other waters subject to regulatory jurisdiction (or lack thereof) represent the professional opinion of LSA Associates, Inc. These findings and conclusions are considered preliminary until verified by the United States Army Corps of Engineers (Corps) and CDFG.

5.3.1. United States Army Corps of Engineers Jurisdiction

As described in Appendix H, Jurisdictional Delineation Report, there are several drainages on site that connect directly or indirectly to the Pacific Ocean. The Prima Deshecha Cañada and Segunda Deshecha Cañada have relatively permanent flows (for at least 3 months) during the year and both eventually flow into the Pacific Ocean, a traditional navigable water (TNW). There is also an unnamed tributary to the Prima Deshecha Cañada that is believed to have a continuous flow at least seasonally. Therefore, these three drainages are also considered relatively permanent waters. All relatively permanent waters are considered jurisdictional and no significant nexus determination is required.

Cascadita Creek was inaccessible during the surveys. As a result, it is unknown whether or not it has a continuous flow. If it does, then the Corps would most likely assert jurisdiction over this drainage. If it does not, a significant nexus determination will be required.

Other drainages that appear natural or appear to function in a capacity of more than just a local storm drain are also believed to be potentially jurisdictional. However, because these drainages do not carry a relatively permanent flow, a significant nexus determination by the Corps will be required.

Drainages that do not carry a relatively permanent flow, are excavated wholly in uplands, and capture only upland sheetflow are typically not regulated by the Corps. However, the Corps does reserve the right to regulate these waters on a case-by-case basis. The locations of these drainages are also shown in Appendix C of the *Jurisdictional Delineation Report*.

The I-5 HOV Lane Extension Project is not expected to impact any jurisdictional or nonjurisdictional wetland waters. In addition, the Option A Build Alternatives for the I-5 HOV Lane Extension Project are not expected to impact any jurisdictional or potentially

jurisdictional nonwetland waters. All of the Option B Build Alternatives are expected to impact 0.01 acre (ac) of potentially jurisdictional waters. In addition, all of the Build Alternatives and Options are expected to impact 0.14 ac of potentially nonjurisdictional waters. No temporary impacts to potentially jurisdictional and/or nonjurisdictional waters are expected at this time.

These findings and conclusions are the professional opinion of the consultant biologists and should be considered preliminary until verified by the Corps. No coordination has been conducted with the Corps at this time.

5.3.2. California Department of Fish and Game Jurisdiction

All of the areas satisfying the Corps jurisdictional criteria for waters of the United States and adjacent wetlands, as described above, are also subject to CDFG jurisdiction pursuant to Section 1602 of the California Fish and Game Code. In addition, streambed banks and adjacent riparian areas extending beyond the limits of the Corps jurisdiction are considered subject to CDFG jurisdiction. Refer to Appendix C of the *Jurisdictional Delineation Report* for the extent of CDFG jurisdiction.

None of the I-5 HOV Lane Extension Project Build Alternatives for Option A are expected to permanently impact any potential CDFG jurisdictional areas. However, all of the I-5 HOV Lane Extension Project Build Alternatives for Option B are expected to permanently impact 0.02 ac of potential CDFG jurisdictional areas. Project impacts are to two drainages (Drainage 12 and Drainage 25) as identified in the *Jurisdictional Delineation Report* (Appendix H). Drainage 12 is a 72-inch (in) concrete trapezoidal channel. Drainage 25 is the Segunda Deshecha Cañada, which is an 8-foot (ft) concrete trapezoidal channel. No temporary impacts to potentially jurisdictional and/or nonjurisdictional waters are expected at this time.

These findings and conclusions are the professional opinion of the consultant biologists and should be considered preliminary until verified by the CDFG. No coordination has been conducted with the CDFG at this time.

5.3.3. Regional Water Quality Control Board Jurisdiction

Because there is no public guidance on determining Regional Water Quality Control Board (RWQCB) jurisdictional areas, jurisdiction was determined based on the federal definition of wetlands (three-parameter) and other waters of the United States based on the ordinary high water mark (OHWM), as recommended by the *September 2004*

Workplan. Therefore, the total impacts to potential RWQCB jurisdictional areas are the same as those as described above for the Corps. No coordination has been conducted with the RWQCB at this time.

5.4. Invasive Species

On February 3, 1999, President Clinton signed Executive Order (EO) 13112 (Invasive Species), requiring federal agencies to combat the introduction or spread of invasive species in the United States. This EO defines invasive species as “...any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration (FHWA) guidance issued August 10, 1999, directs the use of the State’s noxious weed list to define the invasive plants that must be considered as part of the California Environmental Quality Act (CEQA) analysis for a proposed project in California.

There are exotic plant species in the biological study area (BSA) within the nonnative plant communities, within patches of native plant communities, and in areas that have been disturbed by human uses. Exotic species are typically more numerous adjacent to roads and developed areas and frequently border the ornamental landscape. In the past, these areas in the BSA likely supported grassland, oak woodland, coastal sage scrub (CSS), and riparian habitats. Consequently, scattered plant species associated with these plant communities are often found in these areas.

A total of 44 exotic plants occurring on the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory were identified. Of these species, there are 7 with an overall high rating, 23 with a moderate rating, and 14 with a limited rating. Invasive species that have severe ecological impacts are given a high rating. Species with a high rating identified within the BSA are: Hottentot-fig (*Carpobrotus edulis*), sweet fennel (*Foeniculum vulgare*), English ivy (*Hedera helix*), tamarisk (*Tamarix* sp.), giant reed (*Arundo donax*), foxtail chess (*Bromus madritensis* ssp. *madritensis*), and pampas grass (*Cortadera selloana*). These observations should not be considered all inclusive.

In compliance with EO 13112, weed control will be performed to minimize the importation of nonnative plant material during and after construction. Eradication strategies would be employed should an invasion occur. Measures addressing invasive

species abatement and eradication will be included in the project design and contract specifications. These measures may include, but not be limited to:

- All construction site best management practices (BMPs) from the Storm Water Pollution Prevention Plan (SWPPP) will be followed.
- After construction, affected areas adjacent to native vegetation will be revegetated with plant species approved by the Caltrans District Biologist that are native to the vicinity.
- After construction, all revegetated areas will avoid the use of species listed in the Cal-IPC California Invasive Plant Inventory that have a high or moderate rating.
- A plant establishment period will be developed for revegetated areas during final design. A plant establishment period is a duration of time that allows newly installed plant material to reach a state of maturity, requiring minimal ongoing maintenance for survival. A plant establishment period typically includes the removal of litter and trash, weeding, water application, irrigation repair, replacement of plant material that dies, and other activities required to ensure the long-term survival of plant material.

5.5. Migratory Bird Treaty Act

Native bird species and their nests are protected under the Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] 703–712). The MBTA states that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected. The MBTA prohibits the take, possession, import, export, transport, sale, purchase, barter, or offering for sale, purchase, or barter, of any migratory bird and its eggs, parts, and nests, except as authorized under a valid permit.

EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) directs federal agencies “...taking actions that have, or are likely to have, a measurable negative impact on migratory bird populations to develop and implement a Memorandum of Understanding with the Fish and Wildlife Service that promotes the conservation of migratory bird populations.” In accordance with EO 13186 and the provisions of the MBTA, the following measures will be incorporated in the proposed project, as described in Chapter 4:

- In order to avoid impacts to nesting birds, any native or exotic vegetation removal, tree trimming activities, or bridge demolition will occur outside of the nesting season (February 15–August 31). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist will conduct a preconstruction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be

established by the biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or clearing will not be conducted in this zone until the biologist determines that the young have fledged or the nest is no longer active.

- To prevent project effects to bridge- and crevice-nesting birds (i.e., swifts and swallows), all work on existing bridges with potential habitat that is conducted between February 15 and October 31 will include the removal of all bird nests prior to construction under the guidance and observation of a qualified biologist. Removal will occur prior to February 1 of that year, before the swallow colony returns to the nesting site. Removal of swallow nests that are under construction must be repeated as frequently as necessary to prevent nest completion or until a nest exclusion device is installed (such as netting or a similar mechanism that keeps birds from building nests). Nest removal and exclusion device installation will be monitored by a qualified biologist. Such exclusion efforts must be continued to keep the structures free of swallows until September or the completion of construction. All nest exclusion techniques will be coordinated between the Caltrans District Biologist and the resource agencies.

Chapter 6. References

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Appendix A. Special-Interest Plant Species Memorandum

Appendix B. Wildlife Species Observed

Appendix C. Riparian Bird Survey Report

Appendix D. Coastal California Gnatcatcher Survey Report

Appendix E. Bat Habitat Suitability Assessment Memorandum

Appendix F. Arroyo Toad Habitat Suitability Assessment Memorandum

Appendix G. Fairy Shrimp Habitat Suitability Assessment Memorandum

Appendix H. Jurisdictional Delineation Report

Appendix I. USFWS Species List

Appendix J. Biological Resources

Appendix K. Project Impacts to Biological Resources
